Reviewed: 12/30/91
Recommend: N
by G. Ferreira

SITE INSPECTION

MAGNUS CHEMICAL COMPANY

GARWOOD BOROUGH, UNION COUNTY

EPA ID #: NJD980530265

New Jersey Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
Bureau of Site Assessment

NARRATIVE

MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE, GARWOOD BOROUGH
UNION COUNTY, NEW JERSEY
EPA ID NO. NJD980530265

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MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE GARWOOD BOROUGH
UNION COUNTY, NEW JERSEY
EPA ID# NJD980530265

GENERAL INFORMATION AND SITE HISTORY

The Magnus Chemical Company (Magnus) site is located on Block 21, Lot 1 in the Borough of Garwood, Union County, New Jersey. The 3.86-acre site is located in an industrial/commercial section of Garwood and is currently a series of four buildings known as the Bell Factory Terminal. The site is bordered by South Avenue to the south, the Central Railroad Company of New Jersey to the north, industrial property (Lermer Packaging) to the east and the Garwood-Westfield Borough line to the west. The area within 1 mile of the site is highly urbanized. The nearest residential area is approximately 170 feet south of the site along Willow Avenue. The estimated population within 4.0 miles of the site is 201,500.

Block 21, Lot 1 was originally a 8.78-acre lot which included properties from 502 to 650 South Avenue in Garwood. The property is now divided into two separate lots (Lot 1 and Lot 2). Documentation suggests that Magnus's operations only occurred on this portion, Block 21, Lot 1; therefore, this report will concentrate on this portion of the original property. Lot 2 is currently occupied by Lermer Packaging and Excel Air, and is owned by ACP Partnership.

In November 1964 Economics Laboratory obtained Magnus and operated the site until 1971 when manufacturing operations ceased and the property sold to Bell Factory Terminal. On March 13, 1975 Bell Factory Terminal sold the property to ACP Trust and on October 21, 1991 ownership was transferred to ACP Partnership for $1.00.

Various operations have been conducted on site since at least 1909. Review of Sanborn Fire Insurance Maps (years 1909, 1916, 1921, 1928 and 1949) indicate that at least 10 different companies operated on site during this 40-year period. Operations depicted on site during this period include: Bell Electric Motor Company (manufacturers of motors and dynamos) 1909, 1916, 1921 Sanborn Maps; National Metallizing Company (chandeliers and statuary) 1916 Sanborn Map; Geo. C. Moon Company Incorporated (manufacturers of wire rope) 1916 and 1921 Sanborn Maps; Continuous Casting Corporation (brass manufacturers/working) 1916 and 1921 Sanborn Maps; Rodic Rubber Company (rubber goods manufacturer) 1928 Sanborn Map; Brass and Copper Tube Works Inc. (listed as "not in operation") 1928 Sanborn Map; Vendex Inc. (manufacturers of vending machines) 1928 Sanborn Map; DIF Corp-Magnus Chemical Corporation (manufacturers of washing powder) 1928 and 1949 Sanborn Map; and Bingham Bros. Company (manufacturers of metal sash and door frames) 1949 Sanborn Map.

According to the Garwood Borough librarian, a Ply Fiber Container Company may have also operated on site during the late 1930s. Also, Excel Tool & Die Company Inc. began operating as a manufacturer of tools, dies, jigs and special machinery at 628 South Avenue in December 1952. Excel Tool & Die Company Inc. is no longer on site and no information on when its operations ceased were found on file.

Lermer Packaging (aka: Loral Packaging) began operations as a manufacturer of plastic containers and injected molded articles at 502 South Avenue in January 1952. Lermer Packaging has expanded its operations over the years to other buildings on the original Block 21, Lot 1; however, documentation suggests that they have never operated on property or buildings once occupied by Magnus Chemical Corporation. Lermer Packaging underwent an Environmental Cleanup Responsibility Act (ECRA) cleanup (ECRA Case No.86117) which included the excavation of two former fuel oil underground storage tanks (USTs) and resulting contaminated soil, the abandonment of four other USTs and the installation of five monitoring wells. The case was closed under ECRA on September 10, 1991. According to a 1968 Site Map, the a Laminating Tissue Paper Company was operating in the building currently occupied by NAPA Auto Parts and Lermer Packaging.

In 1964 Economics Laboratory purchased Magnus and continued similar operations until approximately 1971 when its manufacturing equipment and aboveground tanks were removed prior to sale to Bell Factory Terminal in 1971. Since that time the site has been leased to various tenants. Currently the site consists of four buildings leased to various tenants.

During a February 9, 1990 Pre-Sampling Assessment (PSA) conducted by the NJDEP/Division of Hazardous Waste Management (DHWM)/Bureau of Planning and Assessment (BPA), a representative of ACP Trust stated that none of the current tenants generated hazardous wastes. Tenants currently on site include NAPA Auto Parts; Lermer Packaging, which occupied a building not previously occupied by either Magnus Chemical or Economics Laboratory; Brooks Equipment Co. Inc., (fire control equipment), 610 South Avenue; Townsend Bros. Moving and Storage, 612 South Avenue; New Mints (sportswear), 618 South Avenue; ICF Kaiser Engineers (environmental contractor-equipment storage), 624 South Avenue; Textiles by Peterson Inc., 632 South Avenue; Spruce Industries (sanitary products), 632 South Avenue; Apple Knoll Printers (warehouse), 632-D2 South Avenue; Team Plastics, 650 South Avenue; SpotField Productions (stage props), Gum and Pockets, Cheyenne Ceiling (interior contractor), K-Wood Working and Exxon (record storage). Other past tenants on site included North Jersey Express, Inter Innovation Inc., 628 South Avenue (off site approximately 1980) D.J. Hartnett and Company, Charter Tool Company and Triangle Tool Company.

Charter Tool Company, Inc. operated a tool and die shop at 624 South Avenue from April 28, 1981 to May 11, 1988 when operations were continued by Triangle Tool Company. This initiated an ECRA investigation (Case No.88825). During the investigation no history or evidence of spills or discharge were noted and no hazardous wastes were to remain on site. In addition, a 550-gallon #2 heating oil UST located in a paved parking area passed a tightness test on May 25, 1989. Charter Tool received a negative declaration from the NJDEP/DHWM on August 18, 1989.

SITE OPERATIONS OF CONCERN

Magnus began manufacturing industrial cleaning compounds and specialty detergents on site in 1928. Also operating within the same building was DIF Corp. which manufactured household cleaning materials. These two

companies shared the same president and vice presidents. In 1928 operations were limited to one building (the front portion of the original building noted in a 1909 Sanborn Map). In 1949 Magnus and DIF Corp. had expanded into the building now occupied by New Mints, 618 South Avenue (Bld. B See Map 2A), as well as a portion of the warehouse building (Bld. C See Map 2A) located to the west. With this expansion Magnus also began manufacturing industrial washing machines, metallic soaps, emulsifying agents and metal working lubricants. Around 1958 DIF Corp. became a subsidiary of Magnus and continued producing household cleaners as well as waterless hand cleaners. During this time the Larkin Soap Company Inc. was formed as a subsidiary of Magnus and operated within the same buildings as Magnus and DIF. On October 30, 1964 Magnus was merged into Economics Laboratory which continued producing specialty detergents and cleaning compounds. In 1971 Economics Laboratory sold the property and removed all manufacturing equipment and tanks. However, according to the 1972 issue of the New Jersey Industrial Directory, Economics Laboratory was still operating on site.

No information was found on file concerning the types of processes used in the production of the various cleaning compounds, detergents and polishes produced by Magnus and its two on-site subsidiaries or the processes continued by Economics Laboratory.

No information was found on file concerning the types of raw materials used by Magnus, DIF or Larkin Soap. Raw materials were most likely stored in tanks and drums. A May 1949 Sanborn Map shows six aboveground oil tanks and three smaller aboveground tanks of unknown contents. In addition, a drum yard was located between the northwestern portion of the original building (Bld. A) and the railroad tracks. Raw materials and products may have been transported to and from the site via rail. A railroad siding was located on site from 1909 to at least 1976.

Economics Laboratory utilized 31 above and below ground tanks for the storage of raw materials. The tanks ranged in size from 1,000 to 10,000 gallons. Tank numbers, contents and capacity as depicted in 1968 can be found below:

Tank No.	Capacity (Gallons)	Content
10	1,000	Naphthol spirits
11	5,000	46 mino spirits
12	5,000	Isophar H
17	10,000	Fuel oil No.2
18	10,000	Super Magnusol
19	10,000	Super Magnusol
20	5,000	Moodsol No.90
21	5,000	No. 798
22	5,000	Heavy aromatic naphtha
23	5,000	Heavy aromatic naphtha
24	10,000	Magnusol X-4
25	5,200	Mineral seal oil
26	5,200	215-D
27	5,000	Isopar K
30	10,000	No.755
*31	10,575	Caustic liquid potash

Tank No.	Capacity (Gallons)	Contents
33	8,000	Empty
*37	10,000	Fuel oil
*38	10,000	Cresylic acid 554
*39	10,000	Cresylic acid 554
*40	10,000	Kerosene
41	10,000	Coray 40
43	10,000	Mixing tank
44	10,000	Pine oil
45	10,000	o-dichlorobenzene
46	10,000	o-dichlorobenzene
47	9,900	Sulfuric acid
59	1,500	Fuel oil
60	3,000	Phosphoric acid
63	10,000	Caustic soda liq. 50%
65	1,200	Empty

* These underground storage tanks were removed in August 1990.

In 1971 Economics Laboratory ceased operations, the manufacturing equipment was removed and the site remodeled. During this time all aboveground storage tanks and underground storage tanks (USTs) were removed or abandoned in place. Five USTs Tanks No. 31, 37, 38, 39 and 40, were not properly abandoned. The USTs were registered with the NJDEP/Division of Water Resources (DWR)/Bureau of Underground Storage Tanks (BUST) on April 1, 1990 in preparation for their removal. The tanks were listed to contain caustic liquid potash, No.2 diesel fuel, kerosene and cresylic acid (Tank Nos. 38 and 39). On August 20, 1991 the fuel oil (diesel) tank and the kerosene tank were excavated and removed. The two cresylic acid tanks were removed on August 28, 1990 and the potash (potassium hydroxide) tank was excavated on August 29, 1990. The tanks appeared to be in good condition; however, during the excavation of the two cresylic acid tanks and the potassium hydroxide tank a representative of the NJDEP/DHWM/BPA observed areas of stained soil within the tank excavations.

No documentation was found on file concerning the types and amount of wastes generated by Magnus. In a June 5, 1981 Superfund Notification, Economics Laboratory stated that organic, inorganic and solvent wastes were generated on site, and wastes were stored in several USTs with a combined storage capacity of approximately 50,000 gallons.

No information was found on file indicating that Magnus or Economics Laboratory had held any Federal of State pollution permits. However, in a May 8, 1986 NJDEP/DWR/BUST Underground Storage Tank Registration questionnaire, ACP Trust had 21 USTs registered under UST #0085250 located at 502 to 650 South Avenue. The tanks ranged in size from 550 gallons to 6,000 gallons and contained heating oil, diesel fuel, leaded and unleaded gasoline and waste oil. Ten tanks were removed in January 1990. Currently, ACP Trust maintains five USTs at 502 to 650 South Avenue, which include a 5,000-gallon kerosene tank (E017); a 1,000-gallon hydraulic oil tank (E018); a 3,000-gallon unleaded gasoline tank (E019); and two 3,000-gallon heating oil tanks (E020 and E021).

No chemical releases have been documented from operations on site. The

potential for release from spillage due to past operations exists. A railroad siding existed on site which connected to the Central Railroad from at least 1909 and still appears on a November 4, 1968 map of the Bell Factory Terminal (See Map 2B). The siding has since been removed and almost the entire site is paved. During the removal of the two cresylic acid tanks and the potash tank on August 27 and 28, 1990 some discolored soil was noted. The stained soil was stockpiled and later disposed of off site.

GROUNDWATER ROUTE

The site is located within the Piedmont Physiographic Province and is underlain by Quaternary deposits of the Pleistocene Epoch and the Brunswick Formation of the Triassic Epoch. The Quaternary deposits within the area consists of ground maraine which is made up of unstratified and unsorted clays, sands and gravel and ranges in thickness from 0 to 100 feet. Underlying these Quaternary deposits is the Brunswick shale which consists of thin-bedded shales, mudstones and sandstones which range in color from reddish-brown to gray. The formation ranges from 6,000 to 8,000 feet thick and is the most intensely developed aquifer in the area.

Based on monitoring well borings from an ECRA investigation of Loral Packaging (located on same block and lot as Magnus), groundwater is encountered at depths of 8 to 9 feet. Groundwater flow is toward the southeast. Depth to bedrock is estimated to be 12 to 16 feet below the surface. No groundwater was encountered during the excavation of the five USTs in August 1990.

No monitoring wells have been installed in conjunction with operations conducted by either Magnus or Economics Laboratory; however, five monitoring wells have been installed in accordance with an NJDEP/Bureau of Environmental Cleanup and Responsiblilty Assessment (BEECRA) investigation of Loral Packaging Corporation (ECRA Case No.86117). Four monitoring wells were installed in July 1988. Monitoring wells MW-1 through MW-3 are near the former location of a 3,000-gallon steel fuel oil tank which was replaced by a 3,000-gallon fiberglass tank in 1986. MW-3 is located adjacent to a drainage ditch and is located in a perched water layer. MW-4 is located southwest of the tank on the opposite side of the building near a 5,000-gallon gasoline tank. MW-5 is a 2-inch diameter well located inside Building R-3 adjacent to a covered pit and a 3,000- gallon fuel oil tank. The wells range in depth from 12 feet (MW-3 and MW-4) to 17 feet (MW-1). Sampling of MW-1 to MW-4 on July 19, 1988; August 1, 1988 and December 1 and 5, 1988 revealed groundwater to be contaminated with low levels of base/neutrals (34 parts per million [ppb] MW-2) and petroleum hydrocarbons (2.4 ppm MW-2). Volatile organics were detected primarily within MW-2 (116 ppb) and MW-3 (33 ppb) with trichloroethylene being the major contaminant. Sampling of MW-5 on June 4, 1990 revealed the well to be contaminated with low levels of base/neutrals (35 ppb) and PHCs (1.8 ppm). It is Loral Packaging's contention that the volatile organic contamination in MW-1 and MW-2 is from an off-site source.

As stated, the Brunswick Formation is a major aquifer in the area and is used for both industrial and public supplies. Of the 50 public supply wells located within 4.0 miles of the site, 47 draw from the Brunswick Formation. The Elizabethtown Water Company maintains 39 wells within 4.0

miles of the site; however, only 9 wells are currently in service. The nearest wells are located 0.8, 0.9 and 1.0 mile west of the site. The wells range from 502 to 525 feet deep and draw from the Brunswick Formation; however, these three wells are currently out of service. The nearest in-service wells are Charles Avenue Well 1 and Charles Avenue Well 2 located 2.6 and 2.5 miles north of the site, respectively, within Mountainside Borough. The wells are 454 and 572 feet deep, respectively, and draw from the Brunswick Formation. The remaining seven wells are located in the Netherwood well field in Plainfield, approximately 3.7 miles southwest of the site. The wells range in depth from 300 to 500 feet and draw from the Brunswick Formation. The Elizabethtown Water Company uses groundwater wells as a supplement to its two surface water withdrawals from the Raritan River and the Delaware and Raritan Canal which supply approximately 90 percent of its water. Public supply wells operated by the Elizabethtown Water Company within 4.0 miles of the site service approximately 10,200 residents. The Elizabethtown Water Company serves approximately 502,500 residents in 44 municipalities within Union, Essex, Middlesex, Somerset and Mercer Counties.

The Rahway Water Department maintains six wells located between 3.0 and 3.3 miles southeast of the site. Wells # 1, #2, #3, #4 and #5 have been out of service since 1987; Well #6 is 269 feet deep and draws from the Brunswick Formation. The Rahway Water Department services approximately 26,600 residents within the municipalities of Rahway, Linden and Clark, of which only 4.4 percent or 1,170 residents are serviced by Well #6; the majority residents are serviced by two surface water intakes from the Rahway River (81 percent) and a bulk purchase from the Elizabethtown Water Company (14.6 percent).

The New Jersey American Water Company operates five wells located 3.8 miles north-northwest of the site in the Baltusrol well field. The wells range in depth from 300 to 462 feet deep and draw from the Brunswick Formation. These five wells serve approximately 2,960 residents. The majority of the its water (70 percent) is suppled by surface water intakes from the Passaic River and Canoe Brook as well Canoe Brook Reservoirs #1, #2 and #3. The New Jersey American Water Company serves approximately 179,000 residents within 19 municipalities located within Union, Essex, Passiac and Morris Counties.

The estimated total population utilizing groundwater within 4.0 miles for potable supplies is 14,330.

There are 27 industrial supply wells within 4.0 miles of the site, the closest being operated by Loral Packaging/Lermer Packaging, approximately 0.3 mile west of the site. The well is 300 feet deep and draws from the Brunswick Formation.

No records of either Magnus or Economic Laboratory being issued a permit for discharge to groundwater were found on file. None of the current tenants on site maintain discharge to groundwater permits. No records of release have been documented; however, there is a potential for groundwater contamination from past on-site operations. Magnus operated 31 above and below ground tanks which held various materials including mineral spirits, fuel oil, caustics, sulfuric and phosphoric acid and naphthal spirits.

SURFACE WATER ROUTE

A small brook is located approximately 500 feet south of the site, which flows parallel to South Avenue for 3,500 feet before turning northeast to join the Rahway River located 1.4 miles downstream of the site.

Storm waters from the site are collected via on-site storm drains as well as storm drains located along South Avenue. The storm waters are discharged to the small brook approximately 2,000 feet downstream of the site.

The Rahway River flows southeast for approximately 12 miles before entering the Arthur Kill which continues southeast to form the New Jersey-New York boundary.

The Rahway River in the area of the site is classified as FW2-NT. Designated uses include the maintenance of established biota, primary and secondary contact recreation, industrial water supply and public water supply after treatment. The Rahway River receives 53 industrial, commercial and municipal NJPDES permitted discharges. The Arthur Kill is classified as SE-2 water and is used for industrial, commercial and recreational purposes.

The Rahway Water Department obtains approximately 81 percent of its potable water supply via a surface water withdrawal from the Rahway River, located approximately 6.9 miles downstream of the site, and serves approximately 21,500 residents within the municipalities of Rahway, Linden and Clark.

No documentation was found indicating if Magnus or Economics Laboratory held NJPDES permits for discharge to surface water. There is a potential for surface water contamination if spills or contaminated runoff entered storm drains and subsequently discharged to the small brook.

Riverine, lower perennial wetlands associated with the Rahway River are located approximately 1.9 miles downstream of the site. Other wetlands associated with the Rahway River include palustrine open water, palustrine scrub/shrub and palustrine forested wetlands. Estuarine wetlands appear approximately 9 miles downstream of the site and include estuarine subtidal open water and estuarine intertidal emergent wetlands.

According to the National Hertiage Index Maps there are no areas of threatened or endangered species along the surface water pathway route. However the bog turtle, Clemmys muhlenbergii, is associated with habitats similar to areas found within the Roselle Quadrangle.

AIR ROUTE

No records of air sampling being conducted due to on-site operations were found on file. In addition, no records of inspections or complaints of air release were found on file. The current potential for air contamination is low. No large-scale manufacturing occurs on site and none of the current tenants maintain air pollution permits.

SOIL

Well logs completed on the Loral Packaging area have indicated soils

consist of dark gray clay which changes to red-brown sandy clay with intermittent gravel and cobbles at a depth of approximately 10 feet. During the excavation of the potassium hydroxide tank, surfical soil consisted of 1 to 2 feet of light gray gravel fill. During the August 27 and 28, 1990 underground tank excavations, approximately 8 cubic yards of discolored soil was stockpiled and covered with plastic. One soil sample was collected from the stockpiled soil on December 17, 1990 and underwent Toxic Compound Leaching Procedure (TCLP) analysis for metals, volatiles, base/neutrals and pesticides as well as petroleum hydrocarbon (PHC) analysis. PHCs were detected at 860 ppm which is above the 100 ppm NJDEP action level. The soil was classified as a RCRA non-hazardous material and disposed of off site.

DIRECT CONTACT

No incidences of direct contact with wastes on site have been documented. According to the president of ACP Trust, none of the current tenants use or generate hazardous materials. Loral Packaging uses solvents (toluene), lacquers and print pigments in their plastic container manufacturing and labeling operations. The potential for direct contact with wastes on site is low. During a February 9, 1990 NJDEP/DHWM/BPA Pre-Sampling Assessment (PSA) it was noted that the majority of the site is paved, and no wastes or drums were observed on site. The site is not fenced, allowing access by the public.

FIRE AND EXPLOSION

No reported incidents of fire or explosion were found on file. Currently, the potential exists because Loral Packaging uses flammable solvents (toluene) and lacquers and thinners in their operations.

ADDITIONAL CONSIDERATIONS

The site is located in a industrial area of Garwood and is almost entirely paved. No records of damage to flora and fauna were found on file and there is little potential of such damage occurring. During past operations potentially contaminated runoff could have entered site and local storm drains which discharge to a small brook which flows southeast of the site. No records of damage to off-site property were found on file. There is little potential for contamination of the food chain from operations on site.

ENFORCEMENT ACTIONS

No records of enforcement actions against Magnus or Economics Laboratory were found on file; however, due to the fact that their operations ceased in 1971, any records may have been destroyed.

SUMMARY OF SAMPLING DATA

1. Sampling date: December 17, 1990

   Sampled by: Environmental Waste Management Associates
   200 Maltese Drive
   Totowa, New Jersey

   Sample: One soil sample

Laboratory:	Integrated Analytical Laboratories Inc. 150 Railroad Avenue Paterson, New Jersey New Jersey Laboratory Certification #16751
Parameters:	Toxic Compounds Leaching Procedure (TCLP) metals, volatile compounds, semivolatiles, pesticides and PHCs
Sample description:	One waste classification sample (WC-1) was collected from soil stockpiled during the excavation of five underground storage tanks in August 1990.
Contaminants detected:	Arsenic, cadmium, lead and selenium were detected at 0.0005 ppm, 0.06 ppm 0.10 ppm and 0.0005 ppm, respectively. All these levels were below the maximum concentration for EP toxicity characteristics. No volatile organics, pesticides or PCBs were detected. Only one semivolatile was detected; 1,4-dichlorobenzene was detected at 4 ppb. PHCs were detected at 860 ppm which is above the 100 ppm NJDEPE action level.
QA/QC:	All NJDEP protocol was followed. No trip or field blanks were utilized. Intergrated Analytical Laboratories, Inc. is a New Jersey certified laboratory.
File location:	Attachment U NJDEPE/DRPSR/BSA 300 Horizon Center Robbinsville, New Jersey

RECOMMENDATIONS AND CONCLUSIONS

Magnus manufactured cleaning compounds and industrial detergents from 1928 until approximately 1964 when Economics Laboratory took over its operations. Economics Laboratory continued operations until approximately 1971. All manufacturing equipment and above and below ground tanks used by Magnus/Economics Laboratory were either removed or abandoned in place. No records of spills were found on file; however, the potential for spills from past operations exists. Currently the site is leased to various tenants which do not generate hazardous wastes. The site is almost entirely paved and no wastes were observed to be stored outside any of the buildings.

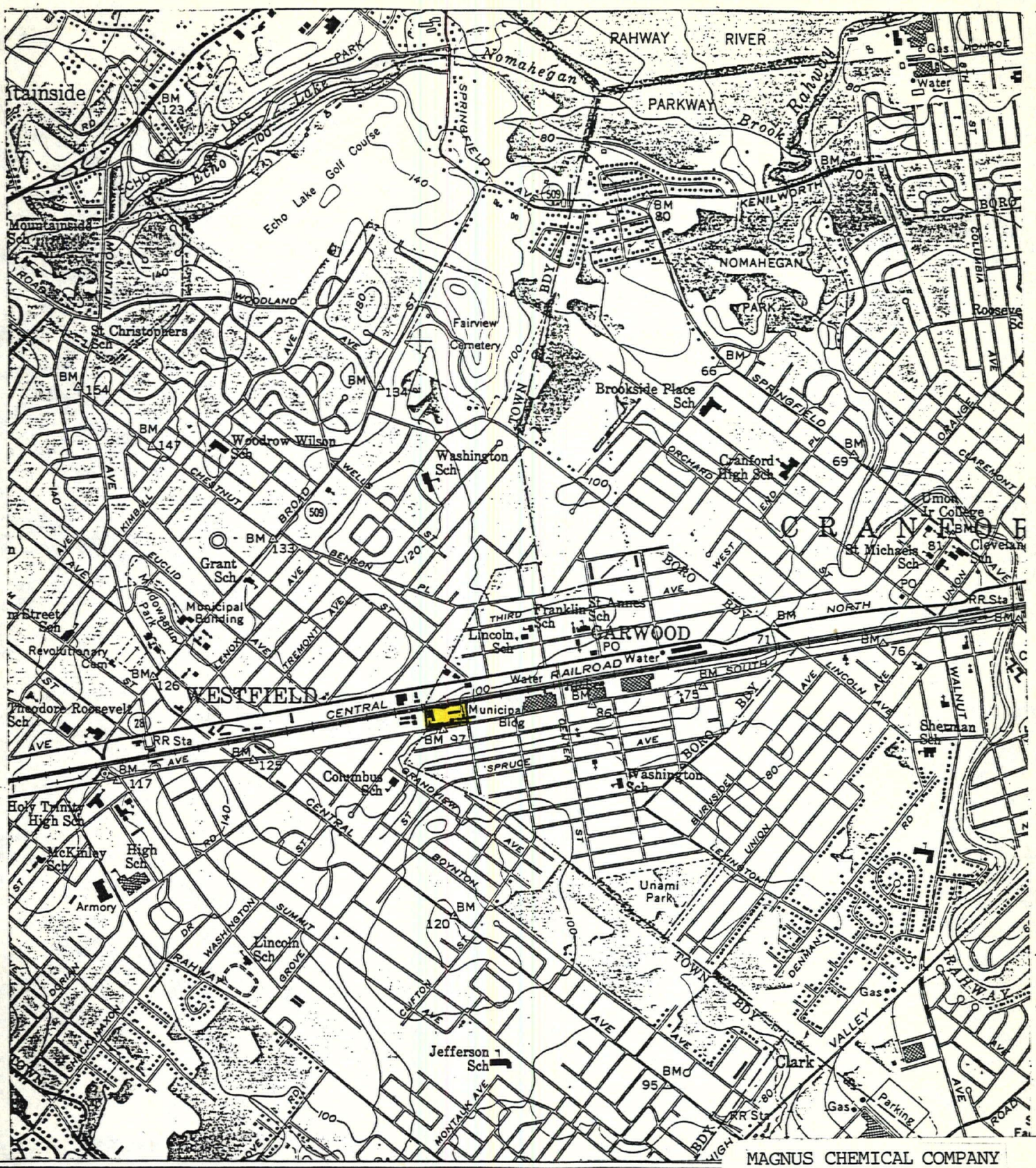
In August 1990 five USTs which were utilized by Economics Laboratory and not removed in 1971 were excavated. The tanks appeared in good condition; however, some soil staining was noted within the excavations. The stained soil was removed and the excavations filled in with clean fill. A soil sample collected from the stockpiled soil contained PHCs above the NJDEPE action level.

No further action under CERCLA is recommended at this time. The case will be transferred to the NJDEPE, Bureau of Metro Field Operations for additional investigation. Soil samples should be collected around the five USTs excavated in August 1990 to determine if past spills contaminated surrounding soil.

Submitted by

Andrew Cyr
Bureau of Site Assessment
December 23, 1991

MAPS



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

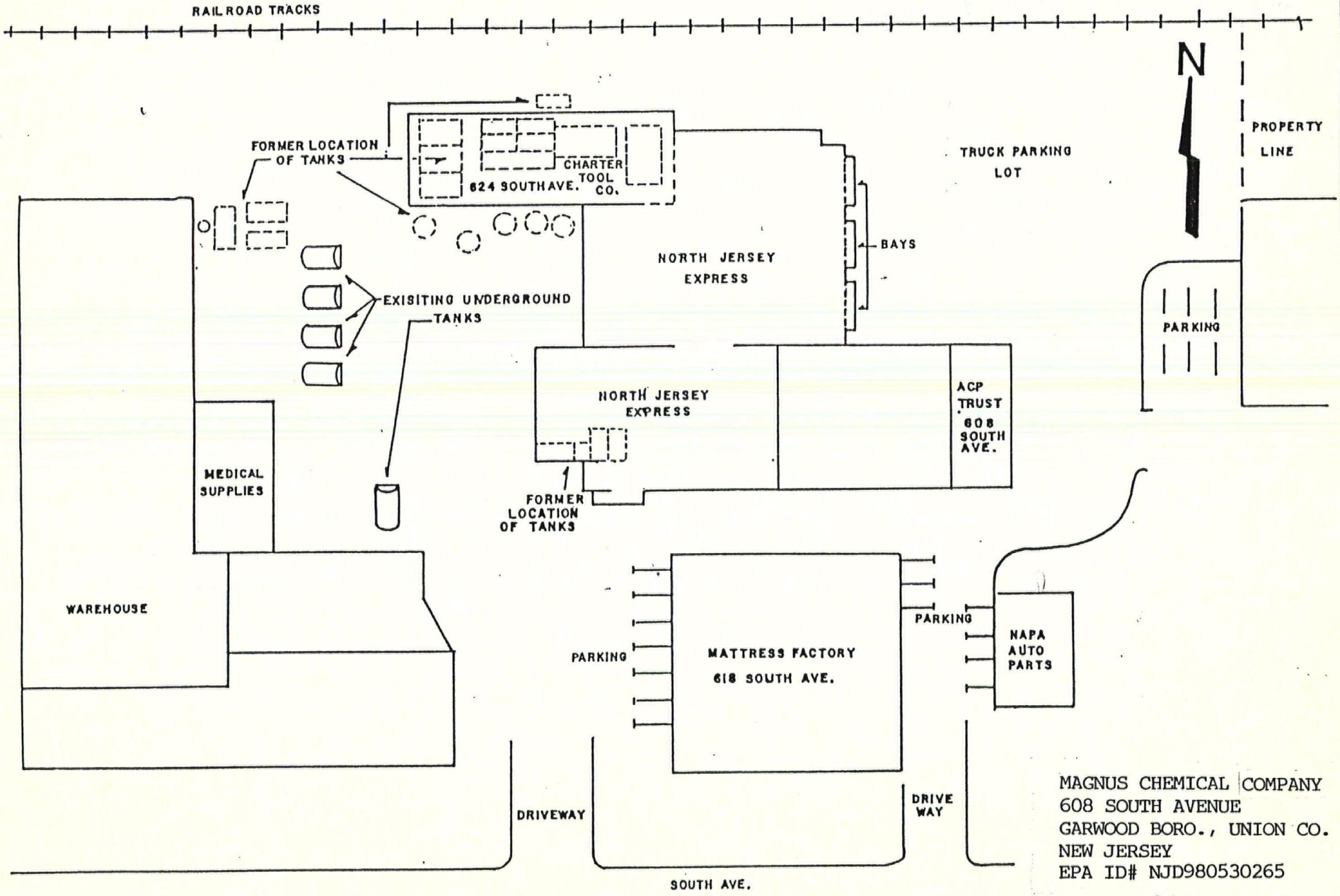
MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE
GARWOOD BORO., UNION CO.
NEW JERSEY
EPA ID# NJD980530265

USGS TOPO MAP: ROSELLE QUAD.

LAT: 40 39 02
LONG: 74 19 56

MAP-1

NUS CORPORATION



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GARWOOD BORO., UNION CO.
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SITE MAP | MAP-2A

MAGNUS CHEMICAL COMPANY
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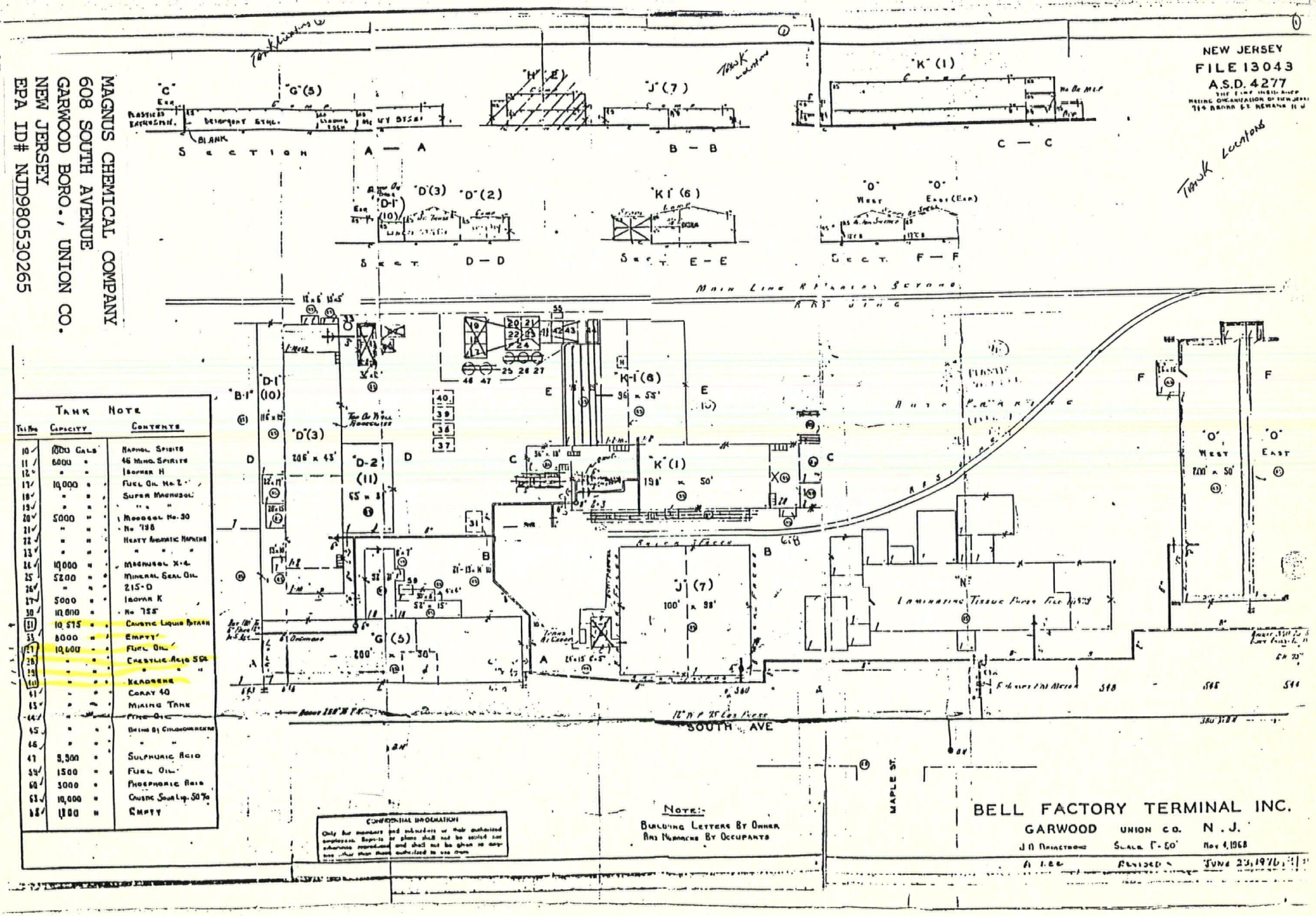
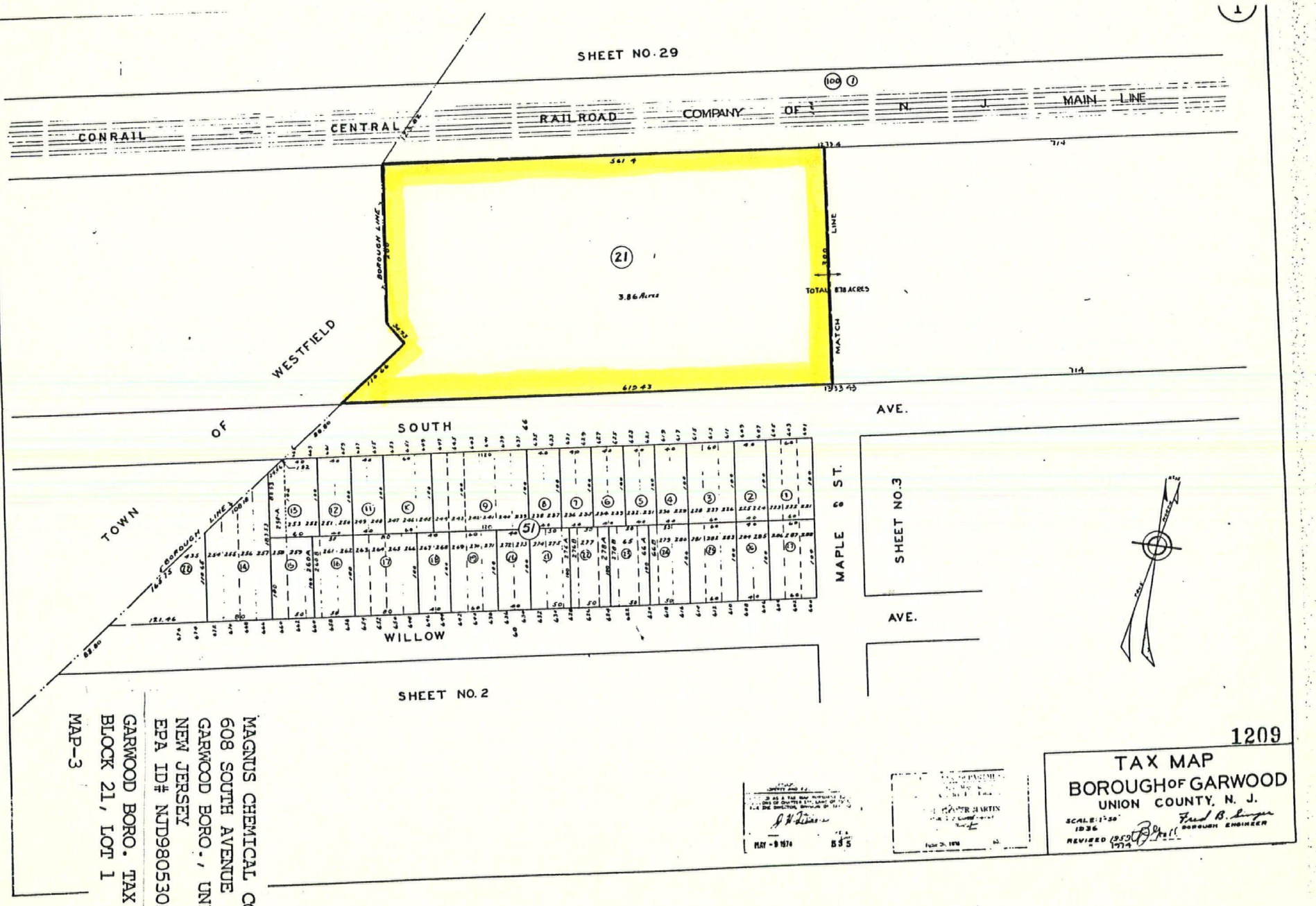
SITE MAP | MAP-2B





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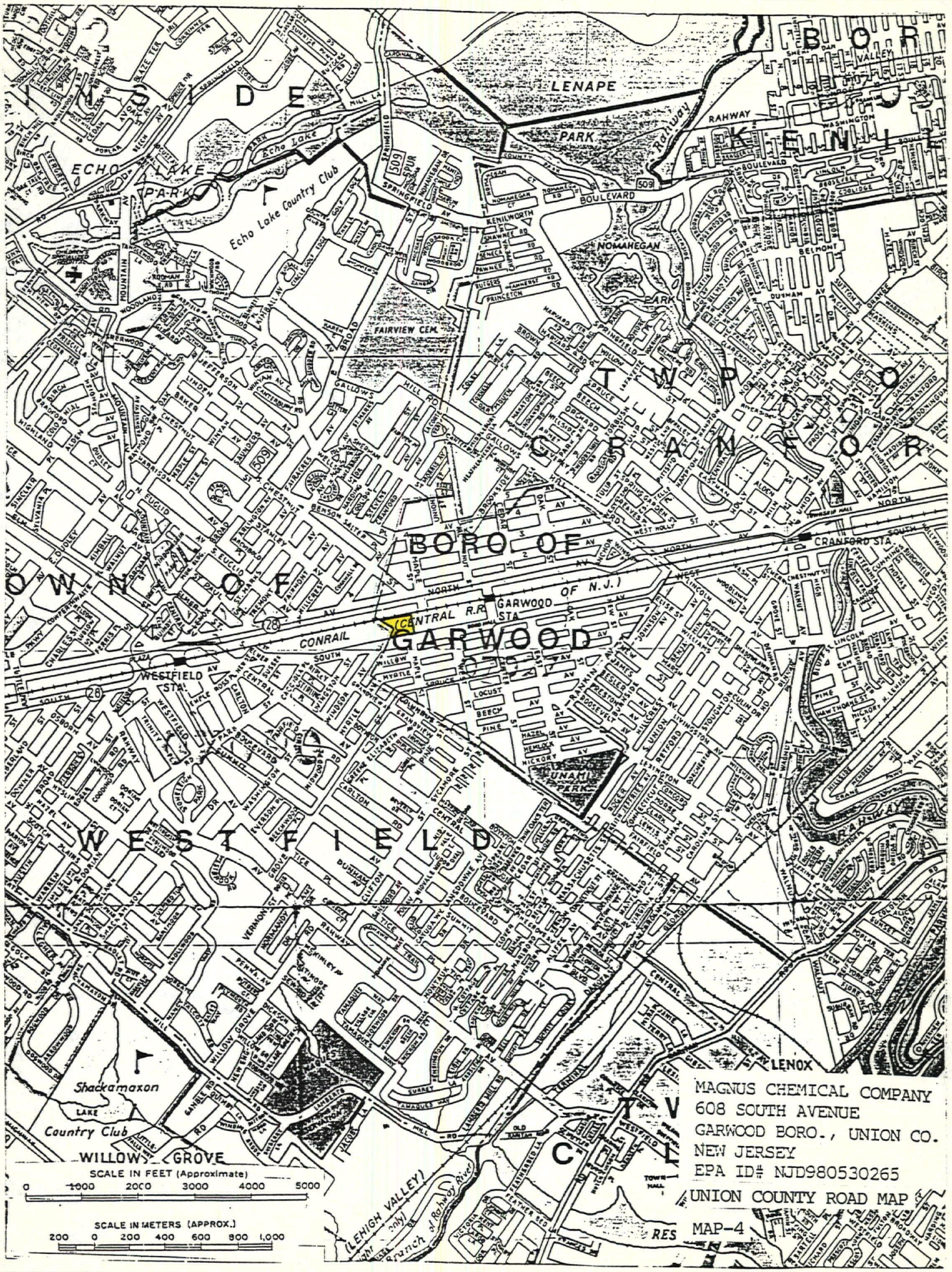
GARWOOD BORO. TAX MAP
BLOCK 21, LOT 1
MAP-3



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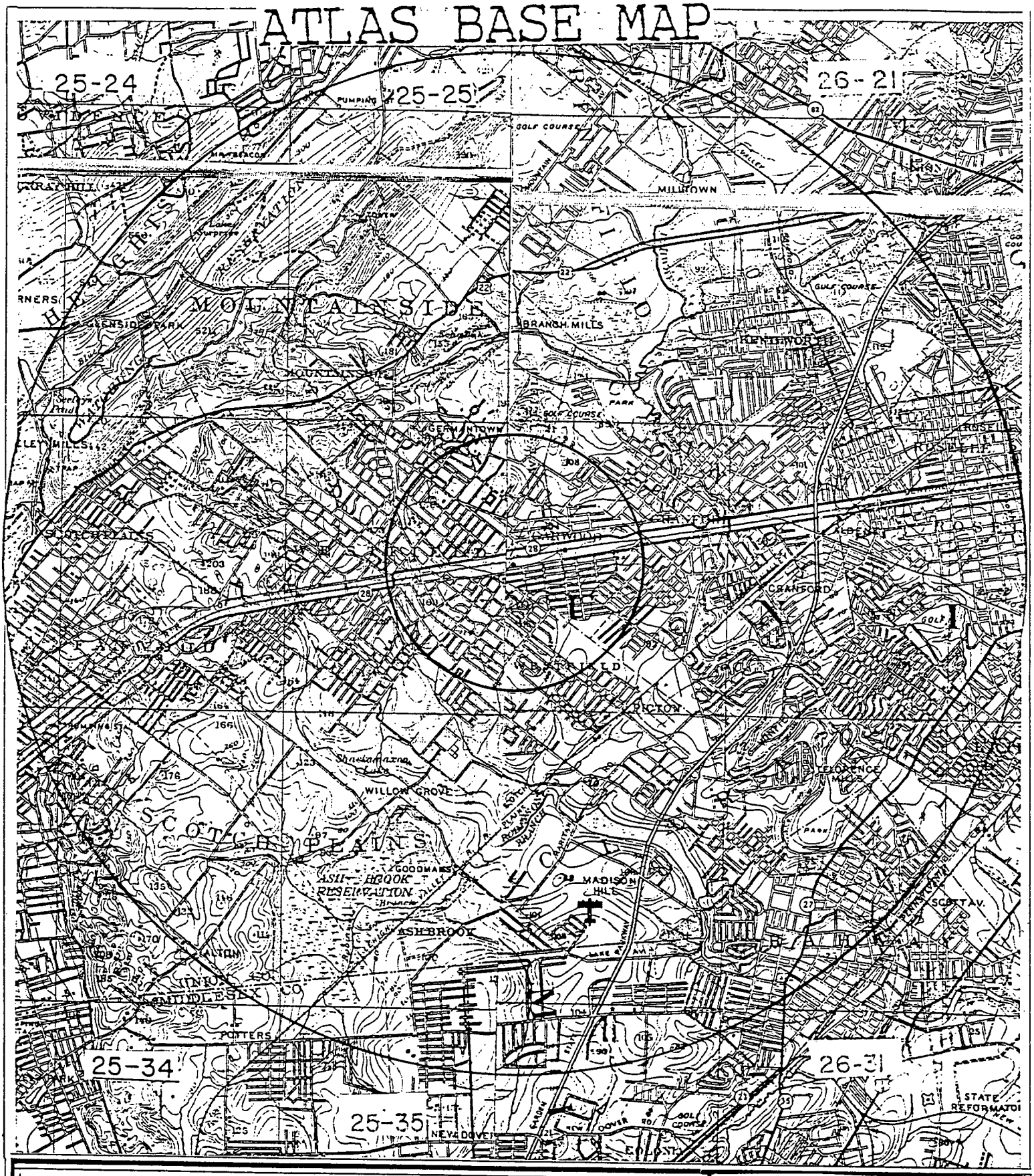
UNION COUNTY ROAD MAP

MAP-4

ATLAS BASE MAP



Scale: 1 Mile to an Inch.

Miles 1 3/4 1/2 1/4 0 1 2 3

Yards 1000 500 0 1000 2000 3000

Meters 1000 500 0 1000 2000 3000

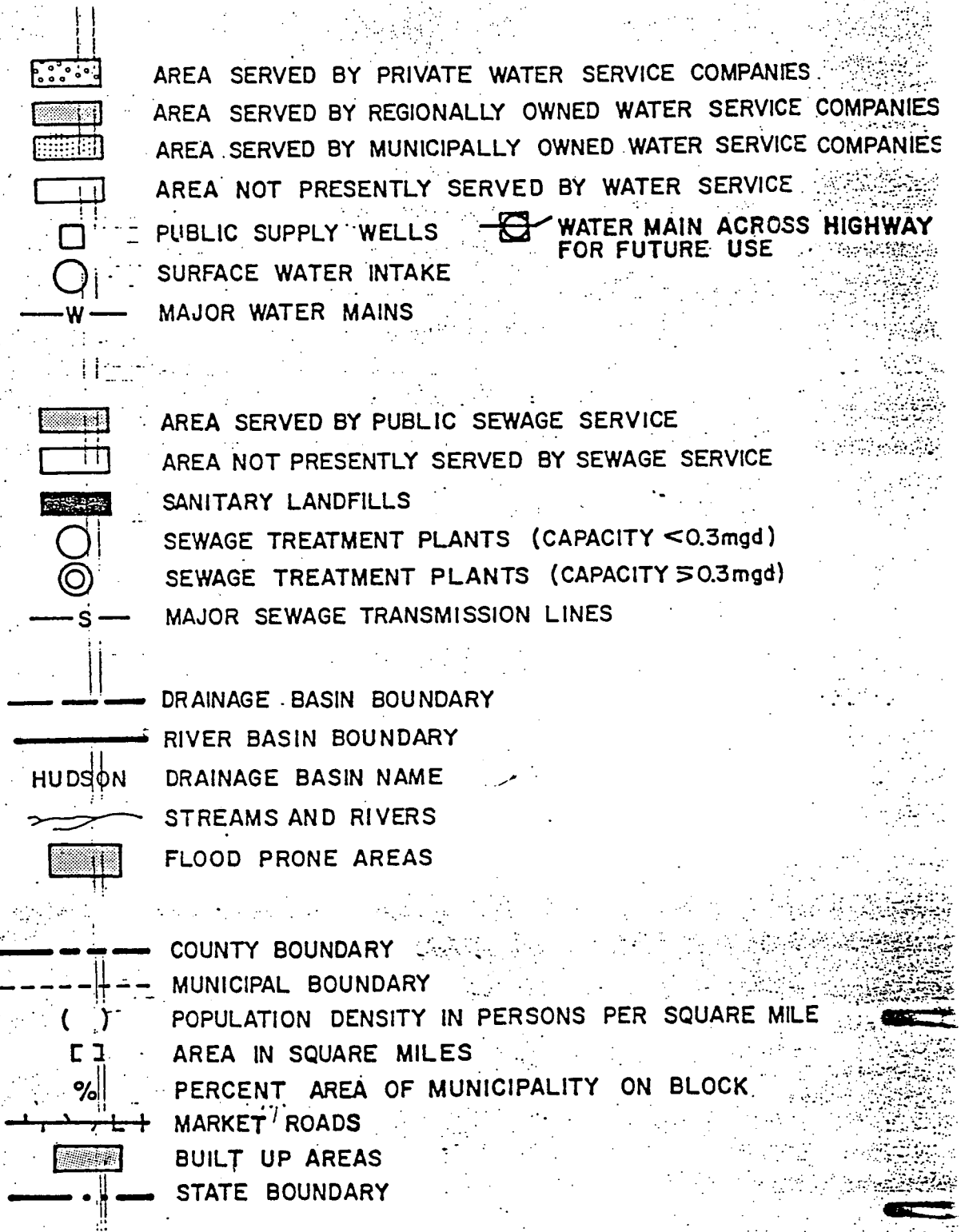
A MOEN & CO BALTIMORE, MD

Contour Interval: 20 feet

MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE
GARWOOD BORO., UNION CO.
NEW JERSEY
EPA ID# NJD980530265
NEW JERSEY ATLAS BASE MAP:
SHEETS 25 + 26

MAP-5

LEGEND


WATER SUPPLY
AREA SERVED BY PRIVATE WATER SERVICE COMPANIES
AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES
AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES
AREA NOT PRESENTLY SERVED BY WATER SERVICE
PUBLIC SUPPLY WELLS
WATER MAIN ACROSS HIGHWAY FOR FUTURE USE
SURFACE WATER INTAKE
W
MAJOR WATER MAINS
SEWAGE, LANDFILL
AREA SERVED BY PUBLIC SEWAGE SERVICE
AREA NOT PRESENTLY SERVED BY SEWAGE SERVICE
SANITARY LANDFILLS
SEWAGE TREATMENT PLANTS (CAPACITY <0.3mgd)
SEWAGE TREATMENT PLANTS (CAPACITY ≥0.3mgd)
S
MAJOR SEWAGE TRANSMISSION LINES
DRAINAGE BASIN
DRAINAGE BASIN BOUNDARY
RIVER BASIN BOUNDARY
HUDSON
DRAINAGE BASIN NAME
STREAMS AND RIVERS
FLOOD PRONE AREAS
POPULATION
COUNTY BOUNDARY
MUNICIPAL BOUNDARY
( )
POPULATION DENSITY IN PERSONS PER SQUARE MILE
[ ]
AREA IN SQUARE MILES
%
PERCENT AREA OF MUNICIPALITY ON BLOCK
MARKET ROADS
BUILT UP AREAS
STATE BOUNDARY

△ — INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE (INCLUDING PRIVATE WELLS)

□ — PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ — UNSUCCESSFUL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ — UNSUCCESSFUL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊡ — NO TEST — NO DATA ON YIELD

——— FAULT (DASHED WHERE INFERRED)

——— CONTACT (DASHED WHERE INFERRED)

PHYSIOGRAPHIC PROVINCE BOUNDARY

WATER SUPPLY TRANSMISSION LINE

NOTE: WHERE THE PRECAMBRIAN FORMATION BOUNDARIES TERMINATE ABRUPTLY, IT IS THE GEOLOGIST'S OPINION THAT THE GEOLOGICAL COMPLEXITY OF THE AREA PREVENTS FURTHER INTERPRETATIONS.

Kmr — CRETACEOUS MAGOTHY AND RARITAN FORMATIONS (SAND AND CLAY)

$\overline{R}$b — TRIASSIC BRUNSWICK FORMATION

$\overline{R}$c — TRIASSIC CONGLOMERATE BEDS OF THE STOCKTON FORMATION

$\overline{R}$l — TRIASSIC LOCKATONG FORMATION

$\overline{R}$db — TRIASSIC DIABASE

$\overline{R}$bs — TRIASSIC BASALT FLOWS

Sd — SILURIAN DECKER LIMESTONE AND LONGWOOD SHALE FORMATIONS

Sgp — SILURIAN GREEN POND CONGLOMERATE

Omb — ORDOVICIAN MARTINSBURG SHALE

$\overline{\text{eOk}}$ — CAMBRO ORDOVICIAN KITTATINNY LIMESTONE

$\overline{\text{e}}$h — CAMBRIAN HARDYSTON SANDSTONE

PRECAMBRIAN:

gh - HORNBLENDE GRANITE WITH PYROXENE GRANITE

ga - ALASKITE

am - AMPHIBOLITE

px - PYROXENE GNEISS

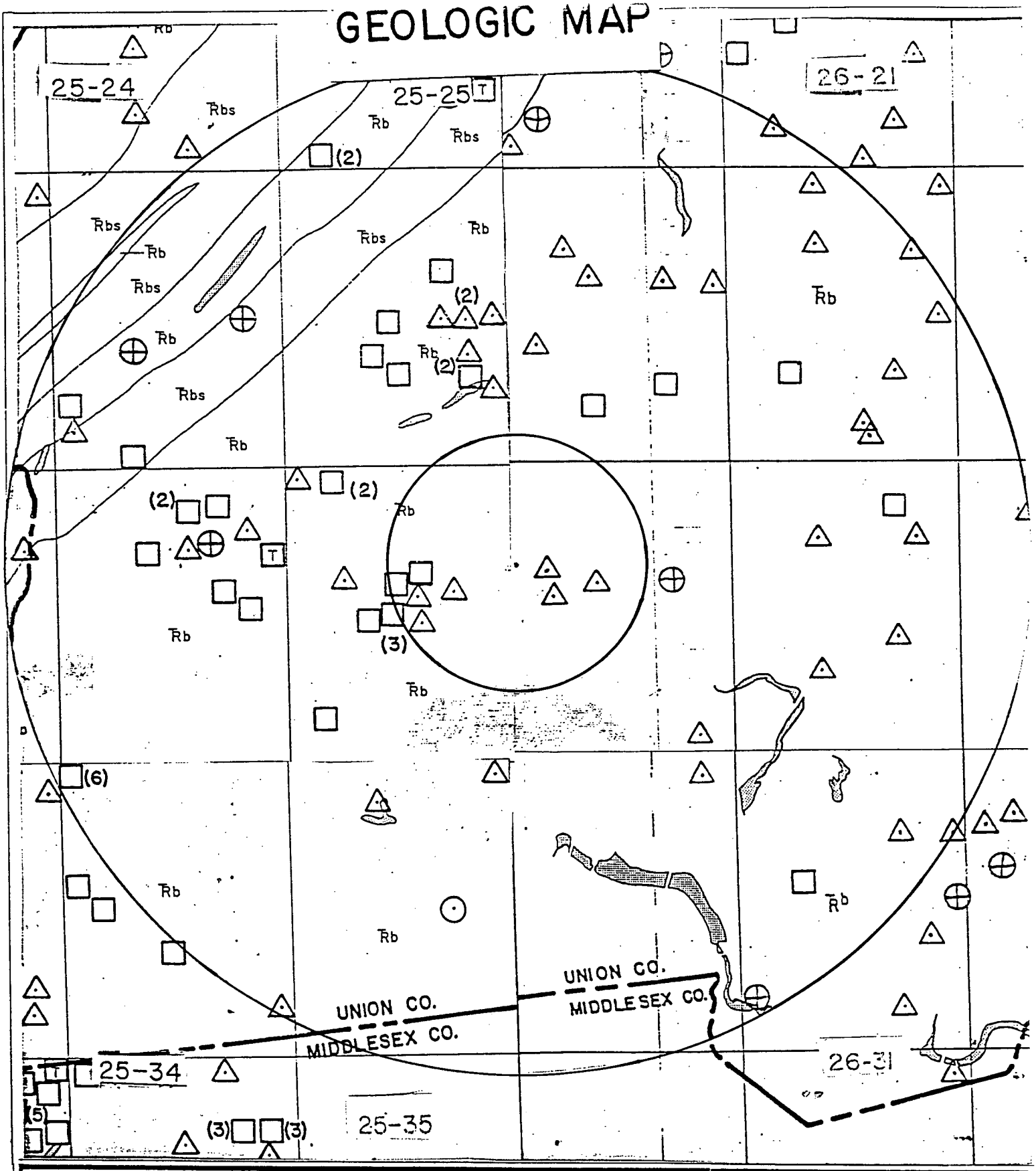
gnq - QUARTZ PLAGIOCLASE GNEISS

gnb - BIOTITE GNEISS

sk - SKARN, GRAPHITE SCHIST

fnd — FORMATION NOT DETERMINED

GEOLOGIC MAP



Scale: 1 Mile to an Inch.

Miles: 1 ¾ ½ ¼ 0 1 2 3

Yards: 1000 500 0 1000 2000 3000

Meters: 1000 500 0 1000 2000 3000

A. HOEN & CO. BALTIMORE, MD

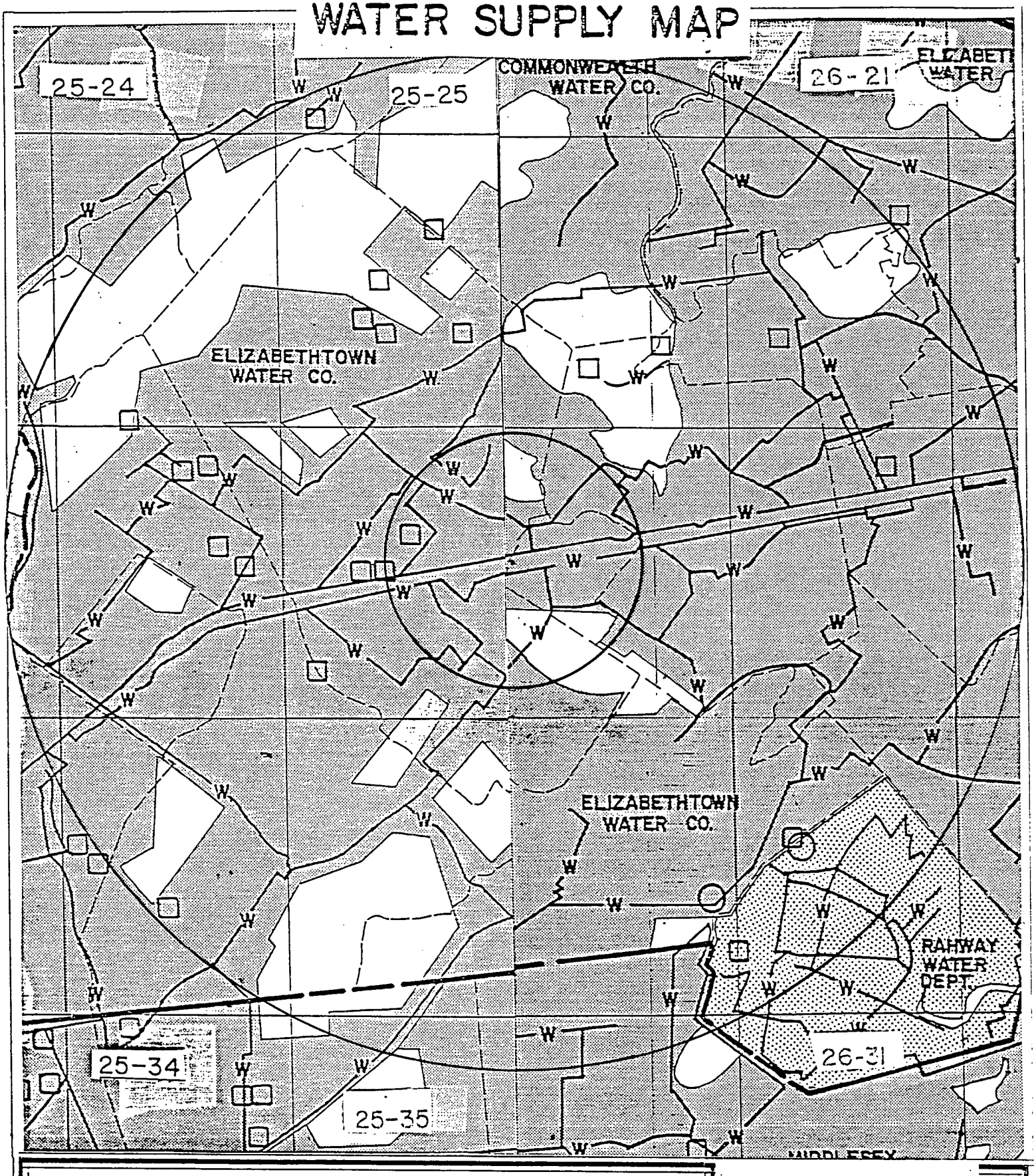
Contour Interval: 20 feet

MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE
GARWOOD BORO., UNION CO.
NEW JERSEY
EPA ID# NJD980530265

NEW JERSEY ATLAS GEOLOGIC OVERLAY: SHEETS 25 + 26

MAP-6

WATER SUPPLY MAP



Scale: 1 Mile to an Inch.

Miles 1 ¾ ½ ¼ 0 1 2 3

Yards 1000 500 0 1000 2000 3000

Meters 1000 500 0 1000 2000 3000

A. HOEN & CO. BALTIMORE, MD.

Contour Interval: 20 feet

MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE
GARWOOD BORO., UNION CO.
NEW JERSEY
EPA ID# NJD980530265
NEW JERSEY ATLAS WATER SUPPLY
OVERLAY: SHEETS 25+ 26
MAP-7

A. Chatham, Roselle

B. Arthur Kill-Rahway; Passaic-Upper Passaic; Raritan-Lower Raritan

C. 1. Watchung - Recording precipitation gauge

2.

Map No.	Location	Period of Record
11	Passaic River near Chatham	1903-1911, 1937-
76	Robinson's Branch Rahway River nr. Goodmans	1921-1924

Water Quality Standards: (explained in Atlas Sheet description)
FW2 except where FW3

D. Brunswick Formation (Trb), Diabase (Trdb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone Plain, Watchung Ridges, Passaic Valley
Elevations (ft.above sea level): ridges 500, valleys 200
Relief (ft.): 350

2. a. Normal Year: 49"
Dry Year: 43"
Wet Year: 56"

b. January: 30°F
July: 73°F

c. 240 days. Last killing frost: 4/25; first killing frost: 10/15

3. a. About 70% urban or suburban. Areas of Harding, Chatham, Chatham Boro, Passaic, Warren, Watchung, North Plainfield, Berkeley Heights, New Providence, Summit, Scotch Plains, Mountainside, Springfield, Plainfield, Fanwood, Westfield, and Millburn are included.
b. Limited to small farms N.W. of the Great Swamp.
c. About 40% oak forest. Primarily on Watchung Ridges and in Great Swamp.
d. Concentrated along C.R.R.N.J., Erie-Lackawanna, and U.S. 22. Bell Telephone Murray Hill Center.
e. Traprock (Watchung, Springfield)
f. Interstate 78, U.S.22, N.J.28, N.J.24, C.R.R.N.J., Erie-Lackawanna, Rahway Valley.

F. Morris County:
Loantaka Brook Reservation
Union County:
Passaic River Park
Watchung Reservation
Commonwealth Water Company:
Private Watershed

G. U.S.Fish and Wildlife Service:
Great Swamp National Wildlife Refuge

H. Cory House, Westfield
Baptist Parsonage, Scotch Plains

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
25-24-226	Commonwealth Water Co.			238	0	Q-Trb
25-24-262	Butterworth			450	0	Trbs
25-24-285	Commonwealth Water Co.			137	0	Q
25-24-286	"			137	0	"
25-24-326	Ciba Pharmaceutical Prod.Inc.	1959	-	838	517	Trb,Trbs
25-24-326	"			600	50	Trb
25-24-326	"			185	50	Q
25-24-326	"			580	260	Trb
25-24-326	"			600	125	"
25-24-326	"			81	108	Q
25-24-326	"			-	105	"
25-24-326	"			503	135	Trb
25-24-331	Commonwealth Water Co.			145	0	Q
25-24-331	Columbia Cleaners			225	150	Trb
25-24-332	Commonwealth Water Co.			100	0	Q
25-24-334	Ciba Pharmaceutical Co.			623	271	Trb
25-24-334	"			687	150	"
25-24-334	"			125	184	Q
25-24-341	Commonwealth Water Co.			145	0	"
25-24-352	Ciba Pharmaceutical Prod.Inc.	1958	199	719	401	Trb,Trbs
25-24-352	Natl.Grocery Co.	1955	195	348	83	Trbs
25-24-357	Willard E. Closs			512	220	Trb
25-24-384	Clearwater Club Corp.			196	99	Trbs
25-24-389	U.S.G.S.	1967	105	124	100	Qtm
25-24-453	Berkeley Chemical Co.	1956	67	200	80	Trb
25-24-461	Gibbon Associates			185	44	"
25-24-463	American Pharmaceutical, Reheis	1965	41	303	270	"
25-24-533	Azoplate Corp.	1962	46	310	128	"
25-24-537	Fablok, Inc.	1962	49	200	164	Trbs
25-24-544	Automatic Injection Well	1969	76	300	125	Trb
25-24-544	Reheis Co.			160	260	"
25-24-657	Union Co. Park Commission			144	28	Trbs
24-24-665	"			365	20	"
25-24-674	"			229	75	Trb
25-24-674	Grassman			229	75	Trbs
25-24-687	Plainfield-Union Water Co.	1957	38	500	135	"
25-24-838	Fanwood Stone Co.	1959	26	325	100	"
25-24-864	Watchung Die Casting Co.	1962	50	305	92	"
25-24-876	Stavis Engineering	1959	40	318	125	"
25-24-885	Two Guys from Harrison	1958	62	350	440	"
25-24-885	"	1959	41	325	393	"
25-24-926	Plainfield-Union Water Co.			665	351	Trb
25-24-926	"			650	300	"
25-24-927	Scotch Plains Twp.	1965	99	450	150	"
25-24-929	Custom Molders			514	62	"
25-24-929	"			320	100	"
25-24-934	Plainfield-Union Water Co.			708	150	"
25-24-935	Custom Molders Co.	1964	117	320	100	"
25-24-939	Elizabethtown Water Co.			416	-	"
25-24-961	"	1964	109	500	197	"
25-24-965	Plainfield-Union Water Co.	1960	79	400	295	"

25-25-131	Commonwealth Water Co.			195	-	Trbs
25-25-139	Dasil Realty/Arch Restaurant	1957	185	430	100	Trb
25-25-159	Houdaille Const. Co.	1962	25	100	100	"
25-25-178	Commonwealth Water Co.			-	700	"
25-25-178	"			394	110	"
25-25-191	Celanese Corp.			226	0	Q-Trbs
25-25-193	Houdaille Const. Co.			341	-	Trbs
25-25-455	Plainfield-Union Water Co.			572	221	Trb
25-25-457	"	1960	43	300	457	"
25-25-461	"			554	504	"
25-25-464	Sterling Plastics Co.	1963	59	456	275	"
25-25-465	"	1966	60	590	214	"
25-25-465	Turbine Equipment Co.	1956	54	250	72	"
25-25-466	Echo Lake Holding Co.			400	180	"
25-25-468	Best Way Prods. Co.	1968	115	475	125	"
25-25-468	Hago Products	1955	93	250	66	"
25-25-482	Plainfield-Union Water Co.	1960	43	300	457	"
25-25-492	"			325	495	"
25-25-493	Echo Lake Country Club	1968	100	500	100	"
25-25-711	Adcon Realty Corp.	1962	44	600	292	"
25-25-712	Plainfield-Union Water Co.	1955	108	506	401	"
25-25-712	"	1955	92	511	521	"
25-25-743	S. Engle			265	135	"
25-25-752	Plainfield-Union Water Co.	1959	27	525	495	"
25-25-753	Elizabethtown Water Co.	1964	40	246	100	"
25-25-753	Rialto Theater/Westfield Realty Co.			250	200	"
25-25-754	Plainfield-Union Water Co.			523	500	"
25-25-755	"			502	350	"
25-25-755	Westfield Y.M.C.A.	1937	-	210	130	"
25-25-755	Plainfield-Union Water Co.	1953	79	572	221	"
25-25-756	H. Sturke			226	80	"
25-25-761	"			108	150	"
25-25-775	Elizabethtown Water Co.	1965	80	500	300	"

J. Geodetic Control Survey monuments described Index Map 25; adjacent Index Map 30

A. Chatham, Plainfield, Perth Amboy, Roselle

B. Arthur Kill-Raritan; Raritan-Lower Raritan

C. 1. Plainfield — Non-recording temperature and precipitation gauges

2. Map No.	Location	Period of Record
102	Green Brook at Plainfield	1938-
3. 286	Bound Brook at New Market Pond outlet	1964-

Water Quality Standards: (explained in Atlas Sheet description)
FW2 except where classified FW3

D. Brunswick Formation (Trb), Diabase (Trdb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone Plain, Watchung Ridges
Elevations (ft.above sea level): ridges 530, valleys 50
Relief (ft.): 480

2. a. Normal Year: 47"
Dry Years 37"
Wet Years 53"

b. January: 31°F
July: 74°F

c. 240 days. Last killing frost: 4/25; first killing frost: 10/15

F. Div. of Parks and Forestry:
Edison State Park
Middlesex County:
Roosevelt Park
Union County:
Ash Brook Reservation and Golf Course
Middlesex Water Company:
Private Watersheds

G. U.S.General Services Administration:
Camp Kilmer

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
25-34-111	Plastylite Corp.	1962	40	250	180	Trb
25-34-165	Elizabethtown Water Co.	1966	64	220	350	"
25-34-194	"	1965	40	400	300	"
25-34-211	Tepper's Store	1955	38	538	250	"
25-34-233	Wigton Abbott Corp.	1966	81	400	201	"
25-34-243	Rosenbaum			306	230	"
25-34-246	Tepper Brothers			427	560	"
25-34-257	Queen City Bottling Co.			310	146	"
25-34-258	Safeway Stores			303	80	"
25-34-275	Elizabethtown Water Co.	1965	65	350	400	"
25-34-292	Muhlenburg Hospital			298	160	"
25-34-292	"			214	160	"
25-34-295	"	1962	54	502	137	"
25-34-311	Plainfield-Union Water Co.			803	119	"
25-34-311	"			400	350	"
25-34-311	"			352	500	"
25-34-311	"			304	321	"
25-34-311	"			353	380	"
25-34-311	"			350	312	"
25-34-341	" "					
25-34-341	"	1959	114	605	350	"
25-34-345	"	1960	114	350	328	"
25-34-353	"	1959	114	605	350	"
25-34-396	Somlack			263	250	"
25-34-411	Plainfield-Union Water Co.			433	420	"
25-34-411	"			44	300	Q
25-34-411	"			400	400	Trb
25-34-411	"			499	350	"
25-34-415	National Starch Products			304	400	"
25-34-415	"			304	320	"
25-34-415	"			44	300	Q
25-34-416	E. Novy & Sons	1969	51	270	200	Trb
25-34-417	Art Color Printing Co.			280	325	"
25-34-418	Allied Asphalt & Mineral Co.			200	250	"
25-34-418	Natl.Starch & Chemical Co.	1968	64	600	550	"
25-34-419	Art Color Printing Co.			325	226	"
25-34-421	Elizabethtown Water Co.	1965	42	350	400	"
25-34-422	International-Plainfield Motor Co.			395	400	"
25-34-422	"			600	257	"
25-34-423	Elizabethtown Water Co.	1965	84	350	300	"
25-34-424	Natl.Starch & Chemical Co.	1964	71	436	380	"
25-34-431	Elizabethtown Water Co.	1965	77	350	450	"
25-34-433	Halsey Nevada Corp.	1954	80	300	130	"
25-34-436	Elizabethtown Water Co.	1965	81	350	400	"
25-34-439	Middlesex Water Co.			300	375	"
25-34-439	"			275	418	"
25-34-457	Thielex Inc.	1965	40	160	65	"
25-34-521	Elizabethtown Water Co.	1965	98	160	65	"
25-34-526	Middlesex Water Co.	1964	111	500	510	"
25-34-531	"	1964	98	500	450	"
25-34-531	"			70	1100	Q

25-34-531	Middlesex Water Co.			70	1300	Q
25-34-531	"			78	1050	"
25-34-531	"			74	1700	"
25-34-531	"			300	700	"
25-34-531	"			305	1050	"
25-34-532	"	1962		74	242	Trb
25-34-533	"	1963	95	101	300	"
25-34-533	"			106	-	"
25-34-534	"	1964	88	501	350	"
25-34-534	"	1964	109	500	730	"
25-34-534	"	1955	63	514	239	"
25-34-534	"	1964	105	501	347	"
25-34-534	"	1964	97	500	325	"
25-34-537	"	1964	67	495	358	"
25-34-538	"	1956	45	608	300	"
25-34-539	"	1962	100	421	255	"
25-34-552	"	1964	53	501	600	"
25-34-554	"			526	412	"
25-34-554	"			409	542	"
25-34-555	"			440	465	"
25-34-555	"			525	502	"
25-34-556	Keystone Plastics, Inc.	1965	41	300	200	"
25-34-556	Middlesex Water Co.	1964	85	500	370	"
25-34-556	"	1964	51	500	600	"
25-34-556	"	1964	58	504	400	"
25-34-557	Keystone Plastics, Inc.	1965	40	300	200	"
25-34-583	Spicer Mfg. Co.	1965		32	206	"
25-34-583	"			363	200	"
25-34-583	Kentile, Inc.			461	310	"
25-34-583	"			174	320	"
25-34-591	Cornell-Dubilier Elec.Co.			324	220	"
25-34-591	Kentile, Inc.	1966	50	250	25	"
25-34-611	Middlesex Water Co.	1963	81	101	1600	Qsd
25-34-613	"	1963	-	110	1420	"
25-34-628	Plainfield Country Club	1957	118	600	412	Trb
25-34-631	P. Amardi			270	100	"
25-34-637	Middlesex Water Co.			402	852	"
25-34-637	"			454	320	"
25-34-637	"	1955	40	532	350	"
25-34-638	"	1956	-	540	465	"
25-34-638	"	1956	50	629	500	"
25-34-638	"	1956	33	700	210	"
25-34-638	Industrial Plastics Co.			450	400	"
25-34-662	Middlesex Water Co.			507	614	"
25-34-662	"			508	795	"
25-34-671	Standard Plastics Prod.Co.	1963	70	200	100	"
25-34-676	Dreyfus Co.			750	350	"
25-34-734	Chemsol, Inc.	1963	50	305	190	"
25-34-738	Parkway Plastics, Inc.	1960	22	340	150	"
25-34-816	Ice Palace, Inc.		41	310	75	"
25-34-828	Kentile Inc.			250	250	"
25-34-861	Tingley Rubber Co.	1961	32	428	266	"
25-34-915	Middlesex Water Co.	1963	78	406	450	"
25-34-925	American Can Co.	1958	250	250	89	"
25-34-938	Metuchen Country Club	1964	54	390	750	"

25-34-946	Edison Asphalt Co.			485	54	Trb
25-34-948	"			301	40	"
25-34-974	Twp. of Raritan			445	25	"
25-34-973	"			457	488	"
25-35-124	Shackamaxon Country Club	1955	22	301	250	"
25-35-133	Cocanougher			89	80	"
25-35-164	City of Rahway			72	4	Q
25-35-729	St. Nicholas Church	1972	63	220	100	Trb
25-35-755	Middlesex Water Co.			610	160	"
25-35-763	"			507	30	"
25-35-765	Roosevelt Hospital	1954	33	394	115	"
25-35-774	National Grocery Co.	1956	45	231	300	"
25-35-775	Costa Ice Cream Plant			275	125	"
25-35-775	"			275	125	"

J. Geodetic Control Survey monuments described
Index Map 30; adjacent Index Map 25

A. Elizabeth, Roselle

B. Arthur Kill-Morses Creek, Rahway, Elizabeth

C. 1. Cranford - Non-recording temperature and precipitation gauges
Springfield - Recording precipitation gauge

2.

Map No.	Location	Period of Record
68	Elizabeth River at Nye Ave., Irvington	7/23/38
69	Elizabeth River at Lyons Ave., Irvington	7/23/38
70	Elizabeth River at York Ave., Irvington	7/23/38
71	Elizabeth River at Chancellor Ave., Irvington	7/23/38
73	West Branch Rahway River at Millburn	1938,1940-1950
74	Rahway River near Springfield	1938-

Water Quality Standards: (explained in Atlas Sheet description)
FW2 except where classified FW3

D. Brunswick Formation (Trb), Basalt Flows (Trbs)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone Plain
Elevations (ft.above sea level): ridges 500, valleys 50
Relief (ft.): 450

2. a. Normal Year: 47"
Dry Year: 39"
Wet Year: 55"
b. January: 32°F
July: 74°F
c. 242 days. Last killing frost: 4/20; first killing frost: 10/20

3. a. About 75% is urban or suburban. Areas of Clark, Cranford, Elizabeth, Hillside, Irvington, Millburn, Springfield, Union, Westfield are included.
b. Agricultural production is not a significant land use.
c. About 15% covered by oak forest. Forested areas primarily within the Watchung Reservation, South Mountain Reservation, and Rahway River Park System.
e. Traprock from quarries in Springfield.
d. Garden State Parkway, U.S.22, N.J.28, N.J.24, and N.J.527.
Railroads - Lehigh Valley, Penn Central, Central Railroad of New Jersey, Erie-Lackawanna, Rahway Valley

F. Essex County:
South Mountain Reservation
Union County:
Lenape Park
Rahway River Parkway
Galloping Hill Park and Golf Course
Warinanco Park
Short Hills Water Company:
Private Watershed

H. First Presbyterian Congregation of Connecticut Farms, Union

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-21-131	City of Orange	1960	75	75	No test	Q
26-21-138	Twp. of Millburn	1967	83	300	214	Trb
26-21-151	Millburn Springfield Co.	1956	37	645	75	Trbs-Trb
26-21-155	Short Hills Water Co.			84	677	Q
26-21-159	"			76	690	"
26-21-167	Endson Mfg.	1966	80	210	60	Trb
26-21-175	Baltusal Golf Club			288	32	"
26-21-177	"			515	94	"
26-21-229	Maplewood Country Club	1963	54	298	488	"
26-21-246	Elizabethtown Water Co.			400	93	"
26-21-247	"			130	400	"
26-21-268	Voorhees & Son			220	126	"
26-21-275	Bardy Farms	1955	30	450	150	"
26-21-289	Interchemical Corp.			349	200	"
26-21-294	Amsco	1949	60	385	200	"
26-21-352	Olympic Park			300	420	"
26-21-364	Irvington, City of			452	45	"
26-21-391	Bennet Oil Co.			298	100+	"
26-21-395	Hatfield Cable & Wire Co.			380	150	"
26-21-397	Cooper Alloy Foundry Co.			325	95	"
26-21-399	Atlas Tool Co.	1959	51	300	165	"
26-21-419	Prince & Ganska Farm			255	275	"
26-21-448	"	1954	58	420	300	"
26-21-451	Howard Johnson's Rest.			200	110	"
26-21-461	Potter Engineering			70	180	Q
26-41-463	Accurate Bushing Co.	1974	135	250	165	Trb
26-21-484	Plainfield-Union Water Co.			250	160	"
26-21-491	Elizabethtown Water Co.	1965	123-1/2	300	400	"
26-21-521	Kratt, Wm. & Co.			345	210	"
26-21-527	Pyro-Plastics			344	250	"
26-21-533	Food Fair Stores, Inc.	1955	27'9"	485	110	"
26-21-538	Union Co. Park Commission			84	350	Q
26-21-566	Smead, Inc.			235	70	Trb
26-21-573	Plainfield-Union Water Co.	1955	181'10"	522	448	"
26-21-586	Rotary Pen Co.	1962	43.5	405	120	"
26-21-589	"	1963	47	402	165	"
26-21-591	White Laboratories, Inc.			470	530	"
26-21-627	Garden State Bowling Alley	1958	41	425	250	"
26-21-659	Progressive Products			150	198	"
26-21-663	Elizabethtown Water Co.			400	525	"
26-21-666	Schering Corp.	1955	50	475	550	"
26-21-742	Diamond Expansion Bolt Co.	1963	51	260	300	"
26-21-745	Circle Plastics Co.	1962	40	302	250	"
26-21-751	Aeolian Co.			136	175	"
26-21-761	Lampert Dairy Farms, Inc.	1967	23/52	270	.6	"
26-21-798	Fibro Corp.	1957	67	250	75	"
26-21-827	Gibson Associates	1956	32'4"	271	274	"
26-21-834	Plainfield-Union Water Co.	1957	36'8"	509	457	"

26-21-838	All Disc Records	1963	36	300	215	Trb
26-21-867	Food Fair Stores, Inc.			304	150	"
26-21-881	Benderson Development, Inc.	1963	21'8"	300	383	"
26-21-916	National Color Laboratory	1964	41.5	282	239	"
26-21-935	Leland Tube Co.	1965	33	500	100	"
26-21-964	Lampert Dairy Farms, Inc.	1959	62.5	803	72	"
26-21-995	Eastern Packing Co.			400	100	"

J. Geodetic Control Survey monuments described
Index Maps 25,26; adjacent Index Maps 30,31

A. Arthur Kill, Elizabeth, Perth Amboy, Roselle

B. Arthur Kill-Morses Creek, Rahway, Woodbridge River; Raritan-Lower Raritan

C. 1. Rahway - Recording and non-recording precipitation gauges

2. Map No.	Location	Period of Record
75	Rahway River at Rahway	1908-1915, 1921-
77	Robinsons Branch Rahway River at Rahway	1939-
3. 75	Rahway River at Rahway	1939-
77	Robinsons Branch Rahway River at Rahway	1964-
273	Rahway River at Rahway, Woodbridge-Hazelhurst Ave.	1964-

Water Quality Standards: (explained in Atlas Sheet description)
FW2, TW2 except where classified FW3 or TW3

D. Wisconsin Terminal Moraine (Qtm), Magothy and Raritan Formations (Kmr), Brunswick Formation (Trb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone Plain
Elevations (ft.above sea level): hills 150, valleys 0
Relief (ft.): 150

Physiographic Province: Coastal Plain
Subdivision: Inner Plain
Major Topographic Features: Arthur Kill, Clay and Marl Region
Elevations (ft.above sea level): hills 200, valleys 0
Relief (ft.): 200

2. a. Normal Year: 46"
Dry Year: 38"
Wet Year: 52"

b. January: 32°F
July: 74°F

c. 242 days. Last killing frost: 4/20; first killing frost: 10/20

F. Middlesex County:
Merrill Park
Roosevelt Park
Union County:
Rahway River Parkway
Middlesex Water Company:
Private Watershed

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-31-132	Hyatt Roller Bearing Div.			501	500	Trb
26-31-237	Tingley-Reliance Rubber Co.			122	120	"
26-31-239	Hatfield Wire & Cable Co.	1959	52	350	323	"
26-31-243	Rahway, City of	1953	21.75	57	355	Q
26-31-266	Quinn & Boden	1966	35	35	23	Trb
26-31-268	"			357	150	"
26-31-274	Rahway, City of			301	12	"
26-31-294	Rahway Theater			349	100	"
26-31-315	Linden Ice Co.	1959	40	550	70	"
26-31-317	General Gum Products	1953	39'9"	316	100	"
26-31-338	Winews, C.H. & John			200	750	"
26-31-342	Layne, New York Co.	1953	36	310	30	"
26-31-364	Lampert Dairy Farms Inc.	1967	39	290	17	"
26-31-465	Middlesex Water Co.	1964	32'8"	505	495	"
26-31-533	Maclac Co.			151	91	"
26-31-576	Costa's Ice Cream Co.	1961	40	359	300	"
26-31-594	Security Steel Equip. Inc.	1957	26	614	34	"
26-31-861	Sabol National Grocery	1956	24	200	70	"
26-31-891	Swift & Co.	1953	43'8"	61	70	Kmr
26-31-894	California Refining Co.			288	92	"
26-31-938	Second Reverse Terminal Inc.	1958	109'6"	168	150	Q

J. Geodetic Control Survey monuments described
Index Maps 30,31; adjacent Index Maps 13,26

SUBJECT TO REVISION

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 403902
LONGITUDE 741956

DRAFT

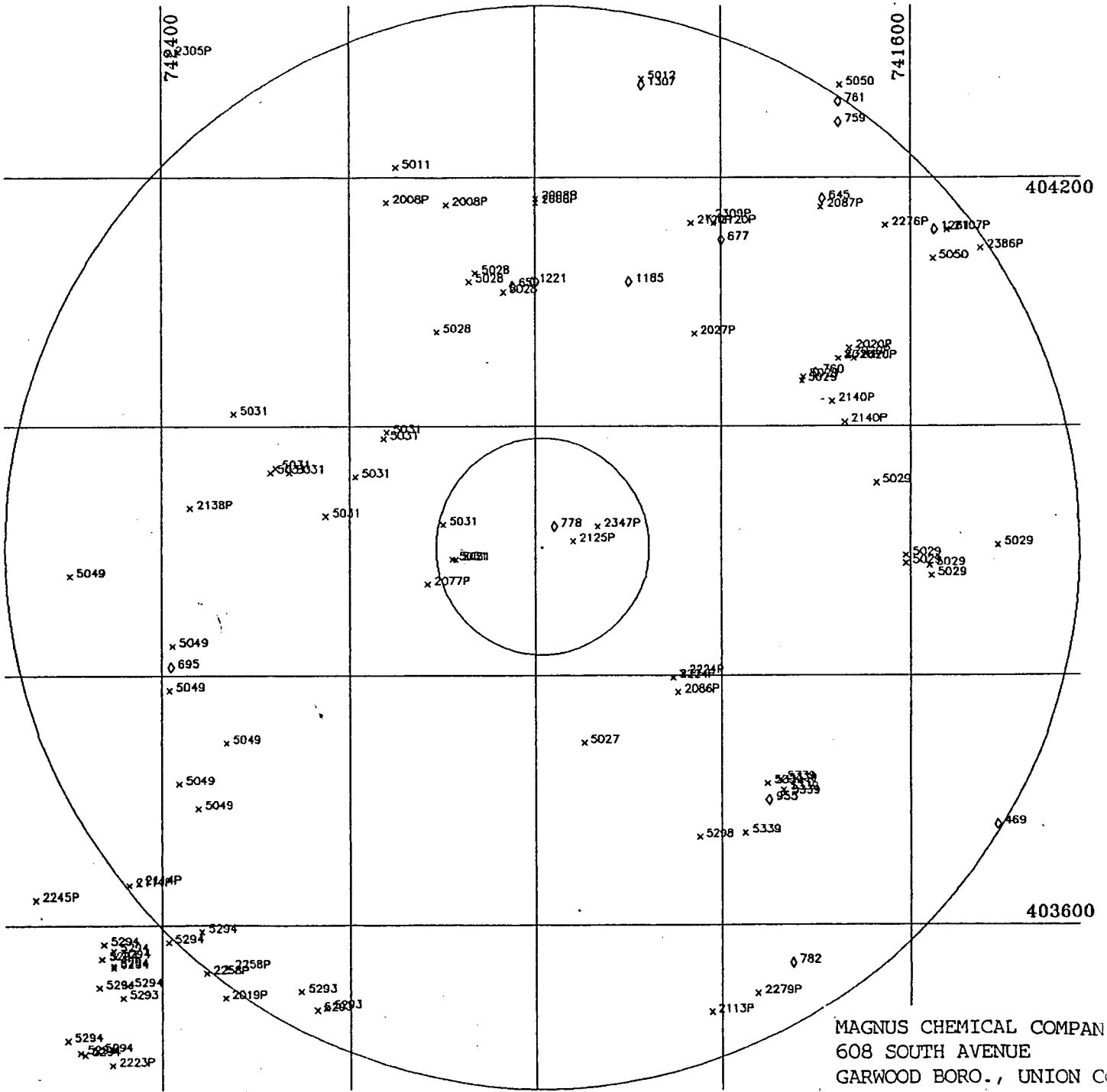
SCALE: 1:63,360
(1 Inch = 1 Mile)

× WATER WITHDRAWAL POINTS
◊ NJGS CASE INDEX SITES
1 MILE AND 5 MILE RADII INDICATED

NJGS CASE INDEX DATA RETRIEVED FROM:
NEW JERSEY GEOLOGICAL SURVEY
ON 12/22/87

PLOT PRODUCED BY:
NJDEP
DIVISION OF WATER RESOURCES
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625

DATE: 02/14/90



MAP-8

SUBJECT TO REVISION

MAGNUS CHEMICAL COMPAN
608 SOUTH AVENUE
GARWOOD BORO., UNION C
NEW JERSEY
EPA ID# NJD980530265

 PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 403902 LAT. 741956 LON. (IN ORDER BY PERMIT NUMBER) - 02/14/90

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
2008P	BALTUSROL GOLF CLUB	4500303	1	404150	742000	M	3.2	39	17	203	GTRB		200
	BALTUSROL GOLF CLUB	4500304	3	404148	742000	M	3.2	39	17	288	GTRB		300
	BALTUSROL GOLF CLUB	4500305	4	404147	742058	M	3.3	39	17	515	GTRB		90
	BALTUSROL GOLF CLUB	2509639	5	404148	742136	M	3.5	39	17	626	GTRB		120
2019P	L.A. DREYFUS COMPANY	2521034	OBSERVATIO	403525	742320		5.1	23	05	900	GTRB		520
2020P	SCHERING CORPORATION	4600076	1	404035	741640	U	3.4	39	08	467	GTRB		450
	SCHERING CORPORATION	2600073	2	404038	741639		3.4	39	08	398	GTRB		400
	SCHERING CORPORATION	2600438	3	404035	741640	U	3.4	39	08	405	GTRB		400
	SCHERING CORPORATION	2605532	4A	404033	741636		3.4	39	08	550	GTRB		450
	SCHERING CORPORATION	2605849	5	404033	741646		3.3	39	08	500	GTRB		450
2027P	REXENE PRODUCTS COMPANY	4600112	2--PRDUCTN	404045	741818	F	2.4	39	08	577	GTRB		250
	REXENE PRODUCTS COMPANY	4600214	1--STANDBY	404045	741818	F	2.4	39	08	396	GTRB		200
2077P	HAHNE'S	2510521	1	403844	742110	F	1.1	39	20	600	GTRB		240
2086P	UNITED STATES GYPSUM COMPANY	2600204	2	403752	741829	U	1.8	39	02	303	GTRB		250
2087P	HARVARD IND. PERMIT CANCELLED	4600003	1	404146	741657	U	4.1	39	19	408	GTRB		150
	HARVARD IND. PERMIT CANCELLED	4600004	2	404146	741657	U	4.1	39	19	405	GTRB		150
	HARVARD IND. PERMIT CANCELLED	2600614	3	404146	741657		4.1	39	19	503	GTRB		150
2107P	TUSCAN DAIRY FARMS INC	2604607	4	404135	741537		4.8	39	19	200	GTRB		450
2113P	COLONIA COUNTRY CLUB.	2601806	1	403518	741807		4.6	23	25	314	GTRB		400
2114P	MUHLENBERG HOSPITAL	4500042		403619	742421		5.0	39	12	298	GTRB		161
	MUHLENBERG HOSPITAL	2510488		403620	742415		4.9	39	12	502	GTRB		320
2120P	TELEDYNE ADAMS	2600479	1	404138	741820	F	3.3	39	19	250	GTRB		150
	TELEDYNE ADAMS	2604432	2	404138	741805	F	3.4	39	19	300	GTRB		200
2125P	LERMER PACKAGING CORPORATION	2602649	WELL #1	403905	741936		0.3	39	26	300	GTRB		200
2138P	CUSTOM MOLDERS CORP.	2512806	1	403921	742342	F	3.3	39	16	514	GTRB		4.46
2140P	ROTARY PEN CORPORATION	2602601	1	404012	741650		3.0	39	08	405	GTRB		60
	ROTARY PEN CORPORATION	2602831	2	404002	741642		3.1	39	08	402	GTRB		105
2223P	KENTILE FLOORS, INC.	2500845	1	403452	742432	S	6.3	23	22	240	GTRB		250
	KENTILE FLOORS, INC.	2500846	2	403452	742432	S	6.3	23	22	174	GTRB		
2224P	HYATT CLARK INDUSTRIES INC.	4600107	1	403759	741832		1.7	39	02	501	GTRB		500
	HYATT CLARK INDUSTRIES INC.	4600108	2	403759	741832		1.7	39	02	505	GTRB		500
	HYATT CLARK INDUSTRIES INC.	2600580	3	403801	741826		1.8	39	02	504	GTRB		500
2245P	MACYS NEW JERSEY, INC.	2501922	1	403612	742520	F	5.7	09	12	501	GTRB		400
	MACYS NEW JERSEY, INC.	2502592	2	403612	742520	F	5.7	09	12	34	GTRB		
	MACYS NEW JERSEY, INC.	2502903	3	403612	742520	F	5.7	09	12	39	GTRB		
2258P	PLAINFIELD COUNTRY CLUB	2506839	1	403537	742332	F	5.0	23	05	600	GTRB		300
	PLAINFIELD COUNTRY CLUB	4500307	2	403540	742318	S	4.9	23	05	204	GTRB		75
2276P	SCHERING CORP.	4600145	2	404137	741616	F	4.4	39	19	676	GTRB		260
	SCHERING CORP.	2600281	3	404137	741616	F	4.4	39	19	635	GTRB		500
2279P	VOLCO BRASS - WELL SEALED 2/88	2600049	1	403527	741737		4.6	39	08	435	GTRB		350
2305P	FAIRMOUNT COUNTRY CLUB	2514786	2	404300	742355		5.7	27	04	370	GTRB		500
2309P	CARPENTER TECHNOLOGY CORP.	4600178	1	404141	741808		3.4	39	19	325	GTRB		200
2347P	GARWOOD PAPERBOARD MILL	4600192	1	403912	741920		0.6	39	06	136	GTRB		150
	GARWOOD PAPERBOARD MILL	4600193	2	403912	741920		0.6	39	06	194	GTRB		
	GARWOOD PAPERBOARD MILL	4600194	3	403912	741920		0.6	39	06	235	GTRB		300
	GARWOOD PAPERBOARD MILL	4600195	4	403912	741920		0.6	39	06	235	GTRB		300
2386P	SUBURBAN GOLF CLUB	2601741	1	404126	741516	F	4.9	39	19	585	GTRB		250
	SUBURBAN GOLF CLUB	POND		404126	741516	F	4.9	39	19	8	GOSD		500
* 5011	NEW JERSEY-AMERICAN WATER CO.	4500265	WELL #12	404205	742130		3.8	39	18	300	GTRB		350
	NEW JERSEY-AMERICAN WATER CO.	4500266	WELL #14	404205	742130		3.8	39	18	300	GTRB		350
	NEW JERSEY-AMERICAN WATER CO.	4500267	WELL #15	404205	742130		3.8	39	18	300	GTRB		250
	NEW JERSEY-AMERICAN WATER CO.	4500268	WELL #17	404205	742130		3.8	39	18	369	GTRB		250
	NEW JERSEY-AMERICAN WATER CO.	4500269	WELL # 18	404205	742130		3.8	39	18	462	GTRB		250
5012	NEW JERSEY-AMERICAN WATER CO.	4600109	KELLY A	404248	741852		4.4	39	17	85	GOSD		1250
	NEW JERSEY-AMERICAN WATER CO.	4600110	KELLY B	404248	741852		4.4	39	17	85	GOSD		1250

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
	NEW JERSEY-AMERICAN WATER CO.	4600111	KELLY C	404248	741852		4.4	39	17	85	GOSD		1042
	ELIZABETHTOWN WATER COMPANY	2604751	ELKS CLUB	403728	741929	F	1.8	39	02	59	GOSD		288
5027	ELIZABETHTOWN WATER COMPANY	2500872	CHARLES 1	404114	742039	F	2.6	39	10	454	GTRB		400
5028	ELIZABETHTOWN WATER COMPANY	4500004	CHARLES 2	404110	742043	F	2.5	39	10	572	GTRB		220
	ELIZABETHTOWN WATER COMPANY	2509083	CENTRAL	404046	742104	F	2.2	39	10	300	GTRB		475
	ELIZABETHTOWN WATER COMPANY	2509206	BRISTOL RD	404105	742021	F	2.4	39	10	315	GTRB		330
5029	ELIZABETHTOWN WATER COMPANY	2602393	CHANDLER	403903	741505	F	4.2	39	14	350	GTRB		300
	ELIZABETHTOWN WATER COMPANY	2501696	FIRST AVE	403933	741622	F	3.2	39	14	509	GTRB		450
	ELIZABETHTOWN WATER COMPANY	2602302	WALABURGA1	403854	741603	F	3.4	39	14	350	GTRB		350
	ELIZABETHTOWN WATER COMPANY	2602360	WALABURGA2	403848	741547	F	3.6	39	14	348	GTRB		200
	ELIZABETHTOWN WATER COMPANY	2602412	WALABURGA3	403858	741603	F	3.4	39	14	321	GTRB		360
	ELIZABETHTOWN WATER COMPANY	2602463	WALABURGA4	403853	741548	F	3.6	39	14	325	GTRB		450
	ELIZABETHTOWN WATER COMPANY	4600015	RICHFIELD	404022	741709	F	2.9	39	08	402	GTRB		250
	ELIZABETHTOWN WATER COMPANY	4600014	QUINTON	404024	741708	F	2.9	39	08	502	GTRB		250
5031	ELIZABETHTOWN WATER COMPANY	2507173	GLENSIDE	404006	742314	F	3.1	39	16	540	GTRB		135
	ELIZABETHTOWN WATER COMPANY	2500130	JERUSALEM1	403940	742247	F	2.6	39	16	650	GTRB		300
	ELIZABETHTOWN WATER COMPANY	2500649	JERUSALEM2	403938	742250	F	2.6	39	16	665	GTRB		350
	ELIZABETHTOWN WATER COMPANY	2500800	JERUSALEM3	403938	742238	F	2.5	39	16	708	GTRB		212
	ELIZABETHTOWN WATER COMPANY	2509281	MORSE AVE.	403917	742215	F	2.0	39	16	400	GTRB		300
	ELIZABETHTOWN WATER COMPANY	2504639	WITTKE 1	403954	742138	F	1.8	39	20	506	GTRB		425
	ELIZABETHTOWN WATER COMPANY	2505083	WITTKE 2	403957	742136	F	1.8	39	20	511	GTRB		520
	ELIZABETHTOWN WATER COMPANY	2508087	ELM STREET	403913	742100	F	1.0	39	20	525	GTRB		350
	ELIZABETHTOWN WATER COMPANY	2500873	WESTFIELD1	403856	742052	F	0.8	39	20	523	GTRB		400
	ELIZABETHTOWN WATER COMPANY	4500005	WESTFIELD2	403856	742054	F	0.9	39	20	502	GTRB		350
	ELIZABETHTOWN WATER COMPANY	2512960	PROSPECT	403936	742156	F	1.9	39	20	500	GTRB		300
5049	ELIZABETHTOWN WATER COMPANY	2508131	TWO GUYS 1	403848	742458		4.4	35	21		GTRB		400
	ELIZABETHTOWN WATER COMPANY	2508132	TWO GUYS 2	403848	742458		4.4	35	21	325	GTRB		400
	ELIZABETHTOWN WATER COMPANY	4500009	NW #1	403753	742355		3.7	39	12	350	GTRB		225
	ELIZABETHTOWN WATER COMPANY	4500010	NW #2	403753	742355		3.7	39	12	500	GTRB		225
	ELIZABETHTOWN WATER COMPANY	4500011	NW #3	403753	742355		3.7	39	12	350	GTRB		450
	ELIZABETHTOWN WATER COMPANY	4500012	NW #4	403753	742355		3.7	39	12	400	GTRB		300
	ELIZABETHTOWN WATER COMPANY	4500013	NW #5	403753	742355		3.7	39	12	350	GTRB		350
	ELIZABETHTOWN WATER COMPANY	4500014	NW #6	403753	742355		3.7	39	12	300	GTRB		
	ELIZABETHTOWN WATER COMPANY	4500015	NW #7	403753	742355		3.7	39	12	350	GTRB		350
	ELIZABETHTOWN WATER COMPANY	4500016	NW #8	403753	742355		3.7	39	12	304	GTRB		350
	ELIZABETHTOWN WATER COMPANY	4500017	NW #9	403753	742355		3.7	39	12	350	GTRB		350
	ELIZABETHTOWN WATER COMPANY	4500018	NW #10	403753	742355		3.7	39	12	350	GTRB		350
	ELIZABETHTOWN WATER COMPANY	4500019	NW #11	403753	742355		3.7	39	12	350	GTRB		250
	ELIZABETHTOWN WATER COMPANY	4500020	NW #12	403753	742355		3.7	39	12	350	GTRB		250
	ELIZABETHTOWN WATER COMPANY	2508185	WATCHUNG A	403708	742349		4.0	39	12	605	GTRB		300
	ELIZABETHTOWN WATER COMPANY	2509037	PROSPECT A	403656	742337		4.0	39	12	350	GTRB		300
	ELIZABETHTOWN WATER COMPANY	2512637	ABERDEEN R	403728	742319		3.5	39	16	350	GTRB		390
	ELIZABETHTOWN WATER COMPANY	4500021	GEORGE ST.	403814	742353		3.6	39	12	350	GTRB		225
5050	ELIZABETHTOWN WATER COMPANY	4600016	1	404121	741546		4.5	39	19	326	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600017	1A	404121	741546		4.5	39	19	143	GTRB		200
	ELIZABETHTOWN WATER COMPANY	4600018	2A	404121	741546		4.5	39	19	120	GTRB		150
	ELIZABETHTOWN WATER COMPANY	4600019	3	404121	741546		4.5	39	19	90	GTRB		200
	ELIZABETHTOWN WATER COMPANY	4600020	3A	404121	741546		4.5	39	19	129	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600021	4A	404121	741546		4.5	39	19	125	GTRB		200
	ELIZABETHTOWN WATER COMPANY	4600022	5	404121	741546		4.5	39	19	91	GTRB		200
	ELIZABETHTOWN WATER COMPANY	4600023	5A	404121	741546		4.5	39	19	128	GTRB		150
	ELIZABETHTOWN WATER COMPANY	4600024	6AR	404121	741546		4.5	39	19	130	GTRB		300
	ELIZABETHTOWN WATER COMPANY	4600025	7	404121	741546		4.5	39	19	326	GTRB		150
	ELIZABETHTOWN WATER COMPANY	4600026	8A	404121	741546		4.5	39	19	125	GTRB		250
	ELIZABETHTOWN WATER COMPANY	4600027	9A	404121	741546		4.5	39	19	125	GTRB		150
	ELIZABETHTOWN WATER COMPANY	4600028	10	404121	741546		4.5	39	19	83	GTRB		100

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
	ELIZABETHTOWN WATER COMPANY	4600029	10A	404121	741546		4.5	39	19	118	GTRB		150
	ELIZABETHTOWN WATER COMPANY	4600030	11A	404121	741546		4.5	39	19	125	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600031	12A	404121	741546		4.5	39	19	122	GTRB		200
	ELIZABETHTOWN WATER COMPANY	4600032	17	404121	741546		4.5	39	19	111	GTRB		250
	ELIZABETHTOWN WATER COMPANY	4600033	19	404121	741546		4.5	39	19		GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600034	23	404121	741546		4.5	39	19	117	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600035	26	404121	741546		4.5	39	19	440	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600036	28	404121	741546		4.5	39	19	96	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600037	29	404121	741546		4.5	39	19	106	GTRB		100
	ELIZABETHTOWN WATER COMPANY	4600038	41	404121	741546		4.5	39	19	83	GTRB		150
	ELIZABETHTOWN WATER COMPANY	2604808	WTB 2	404121	741546		4.5	39	19	78	GTRB		150
	ELIZABETHTOWN WATER COMPANY	2604829	WTB 2A	404121	741546		4.5	39	19	110	GTRB		220
	ELIZABETHTOWN WATER COMPANY	2604830	WH 2	404121	741546		4.5	39	19	100	GTRB		200
	ELIZABETHTOWN WATER COMPANY	2604926	WH5	404121	741546		4.5	39	19	117	GTRB		400
	ELIZABETHTOWN WATER COMPANY	4600051	24	404245	741645		5.1	39	17	200	GTRB		100
5293	MIDDLESEX WATER COMPANY	2500408	1	403528	742231		4.7	23	05	502	GTRB		567
	MIDDLESEX WATER COMPANY	2502008	3	403528	742231	U	4.7	23	05	507	GTRB		450
	MIDDLESEX WATER COMPANY	2502009	4	403528	742231		4.7	23	05	508	GTRB		750
	MIDDLESEX WATER COMPANY	2504516	5	403528	742231		4.7	23	05	532	GTRB		300
	MIDDLESEX WATER COMPANY	2504517	6	403528	742231		4.7	23	05	540	GTRB		400
	MIDDLESEX WATER COMPANY	2505432	7	403525	742425		5.7	23	05	608	GTRB		300
	MIDDLESEX WATER COMPANY	2505637	8	403520	742215		4.7	23	05	629	GTRB		500
	MIDDLESEX WATER COMPANY	2506965	9	403519	742221		4.8	23	05	700	GTRB		300
5294	MIDDLESEX WATER COMPANY	2509603	SPRAGUE #1	403552	742356		5.0	23	22	101	GOSD		790
	MIDDLESEX WATER COMPANY	2511464	SPRAGUE #2	403557	742335		4.8	23	22	151	GOSD		790
	MIDDLESEX WATER COMPANY	2511823	SPRNG LK 5	403458	742452		6.4	23	22	500	GTRB		600
	MIDDLESEX WATER COMPANY	2511828	SPRNG LK 6	403459	742441		6.2	23	22	504	GTRB		500
	MIDDLESEX WATER COMPANY	2512364	SPRNG LK 8	403504	742500		6.4	23	22	501	GTRB		650
	MIDDLESEX WATER COMPANY	2512365	SPRNG LK 9	403457	742449		6.3	23	22	500	GTRB		350
	MIDDLESEX WATER COMPANY	2509763	PARK AV 23	403551	742437		5.5	23	22		GOSD		700
	MIDDLESEX WATER COMPANY	2511815	PARK AV 25	403531	742422		5.6	23	22		GTRB		850
	MIDDLESEX WATER COMPANY	2511816	PARK AV 26	403530	742440		5.8	23	22	495	GTRB		400
	MIDDLESEX WATER COMPANY	2511822	PARK AV 27	403540	742431		5.6	23	22	501	GTRB		
	MIDDLESEX WATER COMPANY	2512119	PARK AV 28	403541	742431		5.6	23	22	500	GTRB		250
	MIDDLESEX WATER COMPANY	2512120	PARK AV 29	403544	742438		5.6	23	22	500	GTRB		730
	MIDDLESEX WATER COMPANY	2512130	PARK AV 30	403548	742431		5.5	23	22	500	GTRB		350
	MIDDLESEX WATER COMPANY	2512131	PARK AV 32	403545	742430		5.5	23	22	501	GTRB		250
5298	MIDDLESEX WATER COMPANY	MIDDLESEX	RESERVOIR	403642	741815		3.1	39	02		SYRAH		9.0
5339	RAHWAY, CITY OF	2600381	1	403710	741723		3.1	39	13	50.5	GOSD		300
	RAHWAY, CITY OF	2600380	2	403709	741722		3.1	39	13	51.5	GOSD		300
	RAHWAY, CITY OF	2600724	3	403708	741731		3.0	39	13	76	GTRB		350
	RAHWAY, CITY OF	2601671	4	403705	741721		3.2	39	13	127	GTRB		400
	RAHWAY, CITY OF	2601672	5	403703	741720		3.2	39	13	135	GTRB		400
	RAHWAY, CITY OF	2603795	6	403644	741745		3.3	39	13	269	GTRB		400

Number of Observations: 155

ATTACHMENT A

103—DEED BARGAIN AND SALE IN GENERAL AS TO GRANTOR & DEED
IND. TO IND. OR CORP. — Plain Language DGRVST-2 One Commerce Drive, Cranford, N.J. 07016

DEED 27460

Prepared by: (Print signer's name below signature)
JAMES C. CONLON, ESQ.

This Deed is made on October 21, 1991,

BETWEEN

MILDRED PISCITELLI, as trustee, under the A. C. P. TRUST, dated March 13, 1975,

whose address is 1610 Vauxhall Road, Union, New Jersey 07083, referred to as the Grantor,

AND

A. C. P. Partnership., A New Jersey General Partnership,

whose post office address is 1610 Vauxhall Road, Union, New Jersey 07083, referred to as the Grantee.

The words "Grantor" and "Grantee" shall mean all Grantors and all Grantees listed above.

Transfer of Ownership. The Grantor grants and conveys (transfers ownership of) the property described below to the Grantee. This transfer is made for the sum of ONE ($1.00) DOLLAR

The Grantor acknowledges receipt of this money.

Tax Map Reference. (N.J.S.A. 46:15-2.1) Municipality of Garwood & Westfield
Block No. * Lot No. Account No.

☐ No property tax identification number is available on the date of this deed. (Check box if applicable.)

Property. The property consists of the land and all the buildings and structures on the land in the Borough of Garwood and Town of Westfield, County of Union, and State of New Jersey. The legal description is:

As described in "Schedule A" attached hereto and made a part hereof.

Together with and subject to all of the leases and tenancies affecting the premises.

BEING the same premises conveyed to Mildred Piscitelli and David H Rothberg, as Trustees under the A. C. P. TRUST, dated March 13, 1975, by Deed from Bell Factory Terminal, Inc. dated March 13, 1975 and recorded in the Union County Register's Office on March 25, 1975 in Deed Book 3030, page 392.

*Tax Maps Of Garwood Block 28, Lot 4; Block 1, Lot 8; Block 28, Lot 1; Block 21, Lot 1 and Block 28, Lot 1.A and Tax Maps of Westfield Block 503, Lot 13. Also being commonly known as 423 North Avenue, 561 South Avenue, 477 North Avenue, 502-650 South Avenue, and 475 North Avenue, respectively, in Garwood, NJ and as 461-469 South Avenue, East, in Westfield, NJ.

RECEIVED & RECORDED
UNION COUNTY, N.J.
91 NOV -7 AM 9:35
JOANNE RAJOPPI
REGISTER

COUNTY OF UNION
CONSIDERATION 1.00
REALTY TRANSFER FEE Ex
DATE 11/07/91 BY OC

ATTACHMENT A-1

E/847

This deed is hereby made subject to that certain Mortgage dated May 30, 1985, and recorded on June 12, 1985, in the office of the Union County Register of Deeds and Mortgages in Book 3525 of Mortgages, Page 493, et seq., as amended by that certain Modification of Mortgage dated May 31, 1988, and recorded on August 2, 1988 in the office of the Union County Register of Deeds and Mortgages in Book 3893 of Mortgages, Page 0214 et seq., and as further amended by that certain Second Modification of Mortgage dated on even date herewith, executed and delivered by the Borrower as Mortgagor, to the Bank, as Mortgagee, to be recorded in the office of the Union County Register of Deeds and Mortgages, having a balance of $649,585.27, plus interest, which mortgage balance the Grantee assumes and agrees to pay according to the terms thereof. The transfer from the Grantor to the Grantee consists of a transfer between the same parties for a consideration of less than $100.00.

WITNESS

A.C.P. PARTNERSHIP,
Grantee

By: _____
Charles Piscitelli,
General Partner

By: _____
Alan Piscitelli,
General Partner

By: _____
Paul Piscitelli,
General Partner

DB3785-0005

ATTACHMENT A-2

SCHEDULE A

FIRST TRACT: BEGINNING at a point in the southerly right of way line of the Central Railroad of New Jersey said point being also the easterly line of lands of the late Chauncey B. Ripley; Thence South 5° 50' East and at right angles to the Central Railroad of New Jersey 200 feet to a stake in the division line of lands of the parties of the first part hereto and lands now or formerly of Hannah Randolph; thence still along the line of lands of Hannah Randolph South 46° 45' East 34.8 feet to a point in lands of parties of the first part, and of Hannah Randolph; thence still along the line of lands of Hannah Randolph South 44° 15' West 100 feet more or less to the North line of South Avenue, as now used and laid out; Thence Easterly along the North line of South Avenue 790 feet more or less to a point distant 300 feet at right angles from the Central Railroad of New Jersey; Thence at right angles to South Avenue and in a Northerly direction 230 feet to a point distant 70 feet from the Southerly right of way line of the Central Railroad of New Jersey; Thence North 45° East 99 feet to the southerly right of way line of the Central Railroad of New Jersey; thence westerly along the same 810 feet to the point or place of BEGINNING.

SECOND TRACT: BEGINNING at a point in the Northerly side of South Avenue, and in the division line between lands now or formerly of The Garwood Land and Improvement Company, of the Town of Garwood in the County of Union and State of New Jersey, and lands conveyed to The Hercules Seamless Drawn Tube Company by said The Garwood Land and Improvement Company of the Town of Garwood, in the County of Union and State of New Jersey, by Deed dated May 24, 1898; Thence (1) Eastwardly along said Northerly side of South Avenue 260 feet to a point; Thence (2) Northwardly at right angles to said South Avenue 300 feet to the division line between lands now or formerly of the Garwood Land and Improvement Company of the Town of Garwood, in the County of Union and State of New Jersey, and the Central Railroad Company of New Jersey; Thence (3) Westwardly along said division line between lands now or formerly of the Garwood Land and Improvement Company of the Town of Garwood, in the County of Union and State of New Jersey, and the Central Railroad Company of New Jersey, 176 feet more or less to a point in the line of lands which were conveyed by The Garwood Land and Improvement Company of the Town of Garwood, in the County of Union and State of New Jersey, to the Hercules Seamless Drawn Tube Company, by Deed dated May 24, 1898 as aforesaid; Thence (4) along said line of lands conveyed as aforesaid South 45° West 99 feet to a point; Thence (5) Southwardly still along said line of lands conveyed as aforesaid and at right angles to said South Avenue 230 feet to the place of BEGINNING.

THIRD TRACT: BEGINNING at a point in the Southerly line of the right of way of the Central Railroad of New Jersey, distant 50 feet southerly at right angles from the monumented center line of said Railroad and in the westerly line of lands conveyed by the parties of the first part to Strang Gas - Electric Car Company by Deed dated August 14, 1909; running thence southerly along the lands conveyed by the parties of the first part to the Strang Gas - Electric Car Company as aforesaid 300 feet to a point in the Northerly side of South Avenue as laid down on the map entitled "Amended Map of Garwood Land and Improvement Company's new Town Side Garwood" filed January 31, 1900 in the office of the Clerk of the County of Union under file No. 100; Thence westerly along said northerly side of South Avenue 275 feet more or less to the lands formerly of Susan S. Johnson; Thence Northerly parallel with the first course and along the said lands formerly of Susan S. Johnson 300 feet to the southerly line of the right of way of the Central Railroad of New Jersey; Thence Easterly along said Southerly line of the right of way of the Central Railroad of New Jersey, 275 feet more or less to the point or place of BEGINNING.

FOURTH TRACT: BEGINNING at an iron monument in the South Right of Way line of the Central Railroad Company of New Jersey, at the west corner of land now or formerly of the Powers and Robinson Foundry and Machine Company, said point being the Northeast corner of the tract of land conveyed to H. C. Lockwood by Deed dated July 14, 1909 from William S. Welch, Trustee, etc., et al, recorded July 16, 1909 in Deed Book 529/223; Thence along said right of way line South 79° 52' West 160 feet; Thence at right angles to said Right of Way line South 10° 08' East 300 feet to the North line of South Avenue; Thence along the North side line of South Avenue North 79° 52' East 102.13 feet to west line of land now or formerly of the Powers & Robinson Foundry and Machine Company; Thence along said land North 37° 31' East 110.66 feet to an iron monument; Thence still along said land North 53° 22' West 34.93 feet; Thence still along said land North 10° 08' West 200 feet to BEGINNING.

FIFTH TRACT: (1) BEGINNING at the intersection of the southerly line of North Avenue with the easterly side of Maple Street, and running thence (1) Eastwardly along the said southerly side line of North Avenue 300 feet to the line of lands conveyed by Christopher W. Le Valley and wife to the Garwood Bronze & Iron Works by Deed dated June 2, 1909 and recorded in Book 526 of Deeds for Union County at page 333; thence (2) Southwardly and at right angles to said side line of North Avenue and binding on said last mentioned lands 200 feet, more or less, to the northerly side of the right of way of the Central Railroad of New Jersey, thence (3) westwardly along said right of way and binding thereon 300 feet to the said side line of Maple Street; and thence (4) northwardly along said side line of Maple Street; 200 feet more or less to the point and place of BEGINNING.

(2) BEGINNING in the southerly side line of North Avenue at the east corner of lands so as aforesaid conveyed by Christopher W. Le Valley and wife to the Garwood Bronze & Iron Works, said point being 600 feet easterly along said side line of North Avenue from the easterly side line of Maple Street, and running thence (1) eastwardly along the said southerly side line of North Avenue 165 feet to a point in a direct line with the westerly side of Center Street as laid out on the southerly side of the Central Railroad of New Jersey; thence (2) southwardly in range with said westerly side of Center Street 200 feet, more or less, to the northerly right of way line of the Central Railroad of New Jersey, thence (3) westwardly along said northerly right of way line of the Central Railroad of New Jersey, parallel with and distant 200 feet, more or less, southerly at right angles from the southerly side of North Avenue 165 feet to the line of said lands so as aforesaid conveyed to the Garwood Bronze & Iron Works; thence (4) northwardly along said last mentioned lands and binding thereon 200 feet more or less to the point and place of BEGINNING.

Together with all right, title and interest which the said Christopher W. Le Valley reserved to himself and his heirs and assigns, in and by a certain deed made by Christopher W. Le Valley and wife to the Garwood Bronze & Iron Works, dated June 2, 1909 and recorded in Book 526 of Deeds for Union County, New Jersey, at page 333.

SIXTH TRACT: All those certain lots, tracts or parcels of land and premises hereinafter particularly described, situate, lying and being in the Borough of Garwood, in the County of Union and State of New Jersey, and known, shown and described on a certain map made by Edwin S. Voorhis, C.E., in August, 1909 and filed in the Office of the Register of Union County at Elizabeth, N.J., entitled, "Section No. 1, property situated at Garwood - Westfield, Union County, New Jersey, belonging to the New York Suburban Land Company" as and by the numbers as follows: Block 1-Lots 251 and 252.

ATTACHMENT A-4

Promises by Grantor. The Grantor promises that the Grantor has done no act to encumber the property. This promise is called a "covenant as to grantor's acts" (N.J.S.A. 46:4-6). This promise means that the Grantor has not allowed anyone else to obtain any legal rights which affect the property (such as by making a mortgage or allowing a judgment to be entered against the Grantor).

Signatures. The Grantor signs this Deed as of the date at the top of the first page.

Witnessed by:

Mildred Piscitelli (Seal)
MILDRED PISCITELLI, as Trustee,
under A. C. P. TRUST,

(Seal)

James C. Conlon
JAMES C. CONLON

STATE OF NEW JERSEY, COUNTY OF UNION SS.:

I CERTIFY that on October 21, 1991
Mildred Piscitelli, as Trustee, under A. C. P. Trust,

personally came before me

and acknowledged under oath, to my satisfaction, that this person (or if more than one, each person):

(a) is named in and personally signed this Deed;
(b) signed, sealed and delivered this Deed as his or her act and deed; and
(c) made this Deed for $ 1.00---- as the full and actual consideration paid or to be paid for the transfer of title. (Such consideration is defined in N.J.S.A. 46:15-5.)

James C. Conlon
(Print name and title below signature)
JAMES C. CONLON
An Attorney at Law of New Jersey

DB3785-0008

ATTACHMENT A-5

NC 1645 – AFFIDAVIT OF CONSIDERATION
RTF-1 (Rev. 1/1/86)

ALL-STATE LEGAL SUPPLY CO.
One Commerce Drive, Cranford, N. J. 07016
ADG VST-1

STATE OF NEW JERSEY
AFFIDAVIT OF CONSIDERATION OR EXEMPTION
(c. 49, P.L. 1968)
or
PARTIAL EXEMPTION
(c. 176, P. L. 1975)

To Be Recorded With Deed Pursuant to c. 49, P.L. 1968, as amended by c. 225, P.L. 1985 (N.J.S.A. 46:15-5 et seq.)

STATE OF NEW JERSEY } ss.
COUNTY OF UNION }

FOR RECORDER'S USE ONLY
Consideration $ 1.0
Realty Transfer Fee $ Ex E
Date Nov 7/91 By OC
*Use symbol "C" to indicate that fee is exclusively for county use.

(1) PARTY OR LEGAL REPRESENTATIVE (See Instructions #3, 4 and 5 on reverse side)

Deponent, JAMES C. CONLON, ESQ. (Name), being duly sworn according to law upon his/her oath deposes and says that he/she is the Legal Representative, (State whether Grantor, Grantee, Legal Representative, Corporate Officer, Officer of Title Co. Lending Institution, etc.)

in a deed dated October 21, 1991, transferring real property identified as Block No. 28, Lot 4; Blk. 1, L.8 Blk. 28, L. 1; Blk. 21, L.1; & Blk.28, L. 1.A on Tax Maps of Garwood, NJ and xxxx Blk. 503, L.13xxxxx on Tax Maps of Westfield, NJ; known as 423 North Ave. 561 South Ave., 477 North Ave., 502-650 South Ave. and 475 North Ave. respectively in Garwood, NJ & 461-469 South Ave. East, in Westfield, NJ (Street Address, Municipality, County) all in Union County, NJ. which is annexed hereto.

(2) CONSIDERATION (See Instruction #6)

Deponent states that, with respect to deed hereto annexed, the actual amount of money and the monetary value of any other thing of value constituting the entire compensation paid or to be paid for the transfer of title to the lands, tenements or other realty, including the remaining amount of any prior mortgage to which the transfer is subject or which is to be assumed and agreed to be paid by the grantee and any other lien or encumbrance thereon not paid, satisfied or removed in connection with the transfer of title is $ 1.00

(3) FULL EXEMPTION FROM FEE Deponent claims that this deed transaction is fully exempt from the Realty Transfer Fee imposed by c.49, P.L. 1968, for the following reason(s): Explain in detail. (See Instruction #7.) Mere reference to exemption symbol is not sufficient.

(a) Consideration is less than $100.00 & (j) Distribution of a Trust established by a parent to three children who formed a partnership consisting of the same three children..

(4) PARTIAL EXEMPTION FROM FEE *NOTE: All boxes below apply to grantor(s) only. ALL BOXES IN APPROPRIATE CATEGORY MUST BE CHECKED. Failure to do so will void claim for partial exemption. (See Instructions #8 and #9)*

Deponent claims that this deed transaction is exempt from the increased portion of the Realty Transfer Fee imposed by c.176, P.L. 1975 for the following reason(s):

a) SENIOR CITIZEN (See Instruction #8)
☐ Grantor(s) 62 yrs. of age or over.*
☐ One or two-family residential premises
☐ Owned and occupied by grantor(s) at time of sale.
☐ No joint owners other than spouse or other qualified exempt owners.

b) BLIND (See Instruction #8)
☐ Grantor(s) legally blind.*
☐ One or two-family residential premises.
☐ Owned and occupied by grantor(s) at time of sale.
☐ No joint owners other than spouse or other qualified exempt owners.

DISABLED (See Instruction #8)
☐ Grantor(s) permanently and totally disabled.*
☐ One or two-family residential premises.
☐ Receiving disability payments.
☐ Owned and occupied by grantor(s) at time of sale.
☐ Not gainfully employed.
☐ No joint owners other than spouse or other qualified exempt owners.

*IN THE CASE OF HUSBAND AND WIFE, ONLY ONE GRANTOR NEED QUALIFY.

c) LOW AND MODERATE INCOME HOUSING (See Instruction #8)
☐ Affordable According to H.U.D. Standards.
☐ Meets Income Requirements of Region.
☐ Reserved for Occupancy.
☐ Subject to Resale Controls.

d) NEW CONSTRUCTION (See Instruction #9)
☐ Entirely new improvement.
☐ Not previously used for any purpose.
☐ Not previously occupied.

Deponent makes this Affidavit to induce the County Clerk or Register of Deeds to record the deed and accept the fee submitted herewith in accordance with the provisions of c. 49, P.L. 1968.

Subscribed and Sworn to before me this 21, day of October, 19 91

Joan A. Conlon
JOAN A. CONLON
A Notary Public of NJ
My Comm. expires 08/5/92

James Conlon
Name of Deponent (sign above line)
JAMES C. CONLON, ESQ.
1461 Morris Ave.
Union, NJ 07083
Address of Deponent

MILDRED PISCITELLI, as Trustee, under the A.C.P. TRUST, dated March 13, 1975.
Name of Grantor (type above line)
1610 Vauxhall Rd.
Union, NJ 07083
Address of Grantor at Time of Sale

FOR OFFICIAL USE ONLY This space for use of County Clerk or Register of Deeds.
Instrument Number 27460 County Union
Deed Number ______ Book 3785 Page 4
Deed Dated 10-21-91 Date Recorded Nov 7/91

IMPORTANT – BEFORE COMPLETING THIS AFFIDAVIT, PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE HEREOF.

ORIGINAL — White copy to be retained by County.
DUPLICATE — Yellow copy to be forwarded by County to Division of Taxation on partial exemption from fee (N.J.A.C. 18:16—8.12).
TRIPLICATE — Pink copy is your file copy.

WHITE AND YELLOW COPIES MUST BE SUBMITTED WITH DEED TO COUNTY RECORDING OFFICER

ATTACHMENT A-6

DEED

Dated: October 21, 19 91

MILDRED PISCITELLI, as Trustee, under the A. C. P. TRUST, dated March 13, 1975,

Grantor,

TO

A. C. P. PARTNERSHIP, A General Partnership of New Kersey,

Grantee.

Record and return to:

CONLON & CONLON
Counsellors at Law
1461 Morris Avenue
Union, New Jersey 07083
(908) 687-5180

27460

33.00 Pd

END OF DOCUMENT

DB3785-0010

ATTACHMENT A-7

ATTACHMENT B

PARCEL NUMBER OWNERS NAME MAILING ADDRESS *PROPERTY LOCATION ADDITIONAL LOTS	DISTRICT	PROPERTY CLASS EXEMPTIONS SPECIAL CODES	STATISTICAL DATA	SALE PRICE SALE DATE BOOK-PAGE	V A L U E S TOTAL-TV LAND-LV IMPROVEMENT-IV TOTAL TAXES/YR
00020-0000-00025 HART PAULINE M MRS 228 BEECH AVE GARWOOD NJ 07027 *228 BEECH AVE 271-272	06-GARWOOD BORO MAP-13	2-RESIDENTIAL	LAND-40x100 BLDG-1.5SF1G		$83,000TV $31,600LV $51,400IV $2,573.00/88
00020-0000-00026 BROPHY JAMES F & WF 226 RANKIN AVE GARWOOD NJ 07027 *226 RANKIN AVE 418A	06-GARWOOD BORO MAP-13	2-RESIDENTIAL	LAND-50x87AV BLDG-1.5SF		$67,300TV $30,000LV $37,300IV $2,086.30/88
00020-0000-00027 SGLENDORIO NICHOLAS J & DIANE C 222 RANKIN AVE GARWOOD NJ 07027 *222 RANKIN AVE 418B	06-GARWOOD BORO MAP-13	2-RESIDENTIAL	LAND-81x70 BLDG-1.5SF	12/30/84 3391-0782	$96,100TV $31,000LV $65,100IV $2,979.10/88
00020-0000-00028 BORO OF GARWOOD CENTER & SOUTH GARWOOD NJ 07027 * LOCUST AVE 419	06-GARWOOD BORO PROPERTY-04-01-378 MAP-13	15C-PUBLIC PROPERTY	LAND-400SF		$1,800TV $1,800LV
00021-0000-00001 BELL FACTORY TERM C/O ACP TRUST 1610 VAUXHALL RD UNION NJ 07083 * SOUTH AVE 1,2	06-GARWOOD BORO MAP-1,3	4A-COMMERCIAL			$5,126,900TV $1,536,500LV $3,590,400IV $158,933.90/88
00021-0000-00003 CASALE INDUSTRIES INC 50 CENTER ST GARWOOD NJ 07027 * CENTER ST 3A	06-GARWOOD BORO MAP-5	4B-INDUSTRIAL	BLDG-2SB		$2,025,100TV $392,000LV $1,633,100IV $62,778.10/88
00021-0000-00004 PETRO PLASTICS 450 SOUTH AVE GARWOOD NJ 07027 *450- SOUTH AVE 3	06-GARWOOD BORO MAP-5	4B-INDUSTRIAL	LAND-2.86 AC BLDG-2SB		$1,666,400TV $500,500LV $1,165,900IV $51,038.40/88

E 06

REDI 800-327-1085

Real Estate Data, Inc.

PARCEL NUMBER OWNERS NAME MAILING ADDRESS *PROPERTY LOCATION ADDITIONAL LOTS	DISTRICT	PROPERTY CLASS EXEMPTIONS SPECIAL CODES	STATISTICAL DATA	SALE PRICE SALE DATE BOOK-PAGE	V A L U E S TOTAL-TV LAND-LV IMPROVEMENT-IV TOTAL TAXES/YR
00021-0000-00005 FIDELITY UNION BANCORPORATION PROP MGNT DEPT PO B 15378 NEWARK NJ 07192 * CENTER ST 4B	06-GARWOOD BORO MAP-5	4A-COMMERCIAL	LAND-31x50 BLDG-1SB		$214,600TV $34,500LV $180,100IV $6,652.60/88
00021-0000-00038 CASALE INDUSTRIES INC 50 CENTER ST GARWOOD NJ 07027 * SOUTH AVE	06-GARWOOD BORO MAP-5	4A-COMMERCIAL	LAND-143x50 BLDG-2SCB		$798,500TV $105,500LV $693,000IV $24,753.50/88
00021-0000-00058 BORO OF GARWOOD CENTER & SOUTH GARWOOD NJ 07027 * CENTER ST 5A,5B,5C	06-GARWOOD BORO PROPERTY-04-01-095 MAP-5	15C-PUBLIC PROPERTY	LAND-10x50 IRR BLDG-10x50		$11,500TV $11,500LV
00022-0000-00003 ALLISON CO SELTZER & DENNISON 630 W MT PLEASANT AVE LIVINGSTON NJ 07039 * SOUTH AVE 3B,5A,5B	06-GARWOOD BORO MAP-12	4B-INDUSTRIAL	LAND-2.936 AC BLDG-2SB		$1,284,100TV $513,800LV $770,300IV $39,807.10/88
00022-0000-00004 HIGHWAY DISPOSAL CO 555 SOUTH AVE GARWOOD NJ 07027 * SOUTH AVE 6F,4	06-GARWOOD BORO MAP-12	1-VACANT LAND	LAND- 1.056 AC		$210,700TV $210,700LV $6,531.70/88
00022-0000-00005 BURISKIN H % SPIRITS GENL PROP ADM 301 BLAIR RD WOODBRIDGE NJ 07095 *10 SOUTH AVE 6	06-GARWOOD BORO MAP-15	4A-COMMERCIAL	LAND-5.1 AC BLDG-1SF		$3,272,000TV $1,030,000LV $2,242,000IV $101,432.00/88
00022-0000-00006 POWER TEST REALTY CO 175 SUNNYSIDE BLVD PLAINVIEW N Y 11803 *2 SOUTH AVE 6A	06-GARWOOD BORO MAP-17	4A-COMMERCIAL	LAND-.24 AC BLDG-1SS	$160,400 02/01/85 3395-0200	$221,100TV $98,200LV $122,900IV $6,854.10/88

ATTACHMENT B

ATTACHMENT C

MAGNUS CHEMICAL COMPANY
608 SOUTH AVENUE
GARWOOD BORO, UNION COUNTY, NJ 07027
EPA ID NO. NJD980530265

The Magnus Chemical Company began operations at 608 South Avenue, Garwood Boro, Union County, New Jersey in approximately 1939. The company manufactured specialty detergents and industrial cleaning compounds. Magnus was acquired by Economics Laboratory Inc. of St. Paul, Minnesota in 1964. In 1971 the facility was closed, the manufacturing equipment was removed and the site was remodeled. According to the facility's Notification of Hazardous Waste Sites Form (USEPA Form 8900-1), hazardous wastes, including organics, inorganics and solvents were stored on site in underground storage tanks. The specific chemicals and the processes used could not be determined from this investigation because so little information exists on file and because numerous telephone calls to Economics Laboratory, Inc. offices failed to reveal which office had managed the site.

The site is located in a small industrial complex known as Bell Factory Terminal. The surrounding area is commercial and densely populated residential. Bell Factory Terminal consists of several buildings housing a variety of businesses. Number 608 South Avenue is currently a vacant office located within a large building. North Jersey Express Trucking Company (610 South Ave.) and Charter Tool Company (624 South Ave.) are also located in the building. Apparently the building was subdivided after Magnus was closed. It could not be determined if Magnus had occupied the other buildings in the complex also.

According to the facility's Notification of Hazardous Waste Sites Form (USEPA Form 8900-1), hazardous wastes were stored in several underground storage tanks with a combined storage capacity of approximately 50,000 gallons. The tanks may have contained caustic liquid potash, fuel oil, gresylic acid and kerosene. There were no documented releases from these tanks. The tanks were never pressure tested or visually checked for leaks so the potential exists per soil and ground water contamination. The tanks were supposedly filled with sand during the renovation in 1971.

There are no chemical releases documented at the site, but because Magnus Chemical Company had existed before the implementation of environmental regulations, the potential exists that poor chemical handling practices may have resulted in releases to the soil and groundwater.

A railroad siding exists to the north of the property that connects with and parallels the active Conrail tracks. The siding is no longer in use at the site, but was probably used in the past to ship raw materials and products. The siding is not paved, as is the rest of the site, and again based on the age of the company, the potential exists that poor chemical handling practices may have resulted in releases to the soil and groundwater.

ATTACHMENT C-1

Site specific hydrogeological data is unavailable, but based upon a review of USGS maps and charts it was determined that the hydrogeology of the area is characterized by two zones of saturation, an unconsolidated water bearing zone occurring in 17 to 37 feet of glacial deposits, and a regional groundwater system. The regional groundwater system, the Brunswick Formation consists of fractured shale bedrock with a high secondary porosity. The two zones may be hydraulically connected, with the unconsolidated zone acting to recharge the bedrock aquifer. Groundwater in the unconsolidated zone most likely flows to the northwest. Depth to groundwater is unknown. The Rahway River is located approximately 1.5 miles to the east.

Potable water is provided by the Elizabethtown Water Company. The water company operates two well fields, the Hummock Well Field and the Springfield Well Field, located in Union Township, both within three miles of the Magnus Site. The wells draw water from the Brunswick Formation.

Because the potential existed for chemical spillage, and because of the limited information available on the site, the Magnus Chemical Company has been assigned a Medium priority for Site Inspection (SI). However, the SI has already been conducted by NUS Corporation for USEPA on March 14, 1983. The SI assigned the site a medium priority for further action because of the unknown status of the underground storage tanks.

To properly delineate any contamination that may exist on site, a soil boring and analysis program should be initiated, focusing on the railroad siding and underground storage tanks. The soil samples should be analyzed for full priority pollutant parameters. Then, depending on the results of the soil sampling program, the ground water should be analyzed for the same parameters.

Submitted by:

Donna L. Gaffigan, HSMS III
Bureau of Planning and Assessment
September 1987

Hours Worked: 25

ATTACHMENT C-2

ATTACHMENT D

NUS

POTENTIAL HAZARDOUS WASTE SITE

EXECUTIVE SUMMARY

Magnus Chemical Co.	NJD980530265
Site Name	EPA Site ID Number
605 South Avenue Garwood, NJ 07027	02-8301-34
Address	TDD Number

Date of Site Visit: 3/4/83

SITE DESCRIPTION The site is currently a subleased warehouse with various tenants. None of the tenants handle or store hazardous wastes. The facility was the location of Magnus Chemical Company from 1939-1971, and manufactured specialty detergents and industrial cleaning compounds. During these years of operation, there were 31 above and below ground storage tanks on site. In 1971 the property was sold and renovated. The renovation included elimination of all the storage tanks with the exception of four or five underground tanks.

PRIORITY FOR FURTHER ACTION: High___ Medium_x_ Low___

RECOMMENDATIONS

Since the contents and integrity of the underground storage tanks is not known, the potential for groundwater contaminatio exists. It is recommended that the existing tanks be sampled, and the tanks structural integrity be determined.

Prepared by: Mark J. O'Neill Date: April 20, 1983
of NUS Corporation

ATTACHMENT D-1

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D980530265

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Magnus Chemical Co.	608 South Avenue				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Garwood	NJ	07027	Union	039	12

09 COORDINATES: 40° 39' 02"N (LATITUDE) | 74° 19' 56"W (LONGITUDE)

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
3, 4, 83 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1939 (BEGINNING YEAR) 1971 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☒ B. EPA CONTRACTOR NUS Corp FIT II (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Martin J. O'Neill	Ecologist	NUS	(201) 225-6160
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
John J. Grelis	Geologist	NUS	(201) 225-6160
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Charles Piscitelli	Warehouse	ACP Trust	(201) 789-0270
	Manager	P.O. Box 222	( )
		Garwood, NJ 07207	( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	10:15 AM	Sunny, 43°F, breezy

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Mark Haulenbeek	EPA Region II, Edison, NJ	(201) 321-6885

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Martin J. O'Neill	NUS	FIT II	201 225-6160	3, 14, 83 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

ATTACHMENT D-2

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D980530265

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS
- ☒ D. OTHER unknown (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS unknown
- CUBIC YARDS unknown
- NO. OF DRUMS unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

unknown

III. WASTE TYPE Nature of materials in underground storage tanks is unknown

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Contents of underground storage are unknown				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

N.U.S. FIT II Site Inspection
Site inspection 3/4/83

Comments: The site is currently a subleased warehouse facility. None of the tennants are involved in hazardous waste storage or handling. However, there are 4, possibly 5 underground storage tanks of unknown content and integrity.

ATTACHMENT D-3

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D980530265

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 27,000
04 NARRATIVE DESCRIPTION

No recorded history, potential cannot be discounted without knowing contents and condition of underground storage tanks.

01 [ ] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No recorded history. Surface run-off does enter storm drains located on site.

01 [ ] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No recorded history; no potential exists.

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No recorded history; no potential exists.

01 [ ] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No recorded history. No potential exists for direct contact due to the fact that the unknown, possibly hazardous material is contained in four or five underground storage tanks.

01 [X] F. CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: 3 (Acres)
04 NARRATIVE DESCRIPTION

No recorded history. Potential cannot be discounted without knowing the integrity and contents of the underground storage tanks.

01 [X] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 27,000
04 NARRATIVE DESCRIPTION

Potential cannot be discounted without knowing contents and integrity of underground storage tanks. The nearest community well is 2 miles to the NW. The nearest industrial well is 0.5 miles to the east along South Ave.

01 [ ] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

No recorded history.

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 27,000
04 NARRATIVE DESCRIPTION

Without knowing the content and condition of the underground storage tanks, the potential for groundwater contamination cannot be discounted. The surrounding area is serviced by Elizabethtown Water Co. which draws 4/5 of the daily usage from a pumping station along the Raritan River in Bound Brook. 1/5 of the daily water usage is drawn from various ground-water wells.

ATTACHMENT D-4

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NJ | 02 SITE NUMBER: D980530265

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No recorded history, no potential exists. Potentially hazardous material is contained in four or five underground storage tanks.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

No recorded history, no potential exists. Potenially hazardous material is contained in 4 or 5 underground storage tanks.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No recorded history; no potential exists.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 27,000
04 NARRATIVE DESCRIPTION

The integrity and content of existing underground storage tanks are not known. The tanks were installed sometime between 1939-1964.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed, no recorded history.

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Surface runoff does enter the storm sewers which are located in the site.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No recorded history; potential does exist due to the fact that the property is easily accessable. Warehouses on site are locked and equipped with security systems.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: 27,000

IV. COMMENTS

The site was the location of Magnus Chemical Co. which operated from 1939-1964. In 1964, Magnus Chemical was acquired by Economics Laboratory of St. Paul Minnesota. Economics Laboratory operated the facility from 1964 to 1971 for the manufacturing of specialty detergents and industrial cleaning compounds. During this time there were approximately 31 (see attached sheet)

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS FIT II Site Inspection 3/4/83
EPA Region II FIT Files, Edison, NJ
103C Form
Interview with Charles Piscitelli, Warehouse Manager for ACP Trust, the current owner
Interview with Mr. Maz, Elizabethtown Water Co.

EPA FORM 2070-13 (7-81)

ATTACHMENT D-5

Part 3 - Description of Hazardous Conditons and Incidents

IV. Comments: (continued)

Storage tanks, both above and below ground. The capacities of these tanks ranged from 1000 gallons to 10,000 gallons. The contents of these tanks were of various natures. In 1971, Economics Laboratory dissolved Magnus Chemical Company, and sold the property to the Bell Factory Terminal, Garwood, NJ.
According to Charles Piscitelli, who worked for the Bell Factory terminal on the renovation of 608 South Avenue in 1971, all of the tanks on the property except four or five of the underground storage tanks were removed. In 1975, 608 South Avenue was sold by the Bell Factory terminal to ACP Trust. The site is currently owned by ACP Trust and subleased to various companies. None of the current tennant's handle or store any hazardous materials other than fuel oil. Four or five underground storage tanks still remain on the site. According to Charles Piscitelli, Warehouse Manager for ACP Trust, the integrity and content of these four or five underground tanks are not known. There were no above ground tanks or drums observed during the NUS FIT II Site Inspection, 3/4/83.

ATTACHMENT D-6

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D980530265

II. PERMIT INFORMATION None

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☒ E. TANK, BELOW GROUND	5x10,000	gallons
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☒ A. BUILDINGS ON SITE

8 warehouses

06 AREA OF SITE
1/3 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one) Unknown
- ☐ A. ADEQUATE, SECURE
- ☐ B. MODERATE
- ☐ C. INADEQUATE, POOR
- ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

There are 4 or 5 underground storage tanks on site. The age, integrity and contents of the tanks are unknown. At one time the contents of the tanks in question were as follows: One 10,000 gallon tank of caustic liquid potash; one 10,000 gallon tank of fuel oil; two 10,000 gallon tanks of cresylic acid 554; one 10,000 gallon tank of kerosene.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Wastes in underground storage tanks.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

NUS FIT II Site Inspection, 3/4/83
Interview with Charles Piscitelli, Warehouse Manager, ACP Trust, the current owner
Site plan for Bell factory terminal by J.D. Armstrong Nov. 4, 1968 and updated by A. Lee, June 18, 1976.

EPA FORM 2070-13 (7-81)

ATTACHMENT D-7

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D980530265

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☒
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☒
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 2.0 (mi)
B. .5 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 27,000

03 DISTANCE TO NEAREST DRINKING WATER WELL 2 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
35 (ft)	SE	40 (ft)	3.6×10^5 (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

There are two community wells located 2 miles to the NW of the site on Breeze Noll Road, in Mountainside. Only one well is utilized at a time, and they pump 250 gal per minute. The depth of the wells are 500 ft. The industrial well is located 0.5 miles to the east of the site along South Avenue in Garwood, NJ

10 RECHARGE AREA	COMMENTS	11 DISCHARGE AREA	COMMENTS
☒ YES ☐ NO		☐ YES ☒ NO	

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Rahway River	☐	1.5 (mi)
Arthur Kill	☐	7.8 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 42,000 NO. OF PERSONS	B. 70,000 NO. OF PERSONS	C. 144,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 75 ft. (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: 250

04 DISTANCE TO NEAREST OFF-SITE BUILDING: 75 ft (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site is located adjacent to a railroad corridor which is utilized by the industrial plants along South Ave. South and north of South Avenue are densly populated urban areas.

ATTACHMENT D-8

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D980530265

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-4} - 10^{-6}$ cm/sec ☒ B. $10^{-4} - 10^{-5}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☒ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
30 (ft)	unknown (ft)	5.1-5.5	

06 NET PRECIPITATION	07 ~~XXXXX~~ 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
19 (in)	7.5 100 yr event (in)	0-3 %	SE	0-3 %

09 FLOOD POTENTIAL
SITE IS IN greater than 500 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. 3 (mi)	B. 2 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
No endangered species within 7 miles (mi)

ENDANGERED SPECIES. _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS	
		PRIME AG LAND	AG LAND
A. 40 ft. (mi)	B. 75 ft. (mi)	C. _____ (mi)	D. 20 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Surrounding area has gentle slopes if any, 0-3%. Underlying bedrock is predominantly soft red shale with sandstone interspersed. Soils are silty loams. Entire site is covered by relatively impervious surface coatings; concrete and asphalt.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

U.S. G.S. Topographic maps 7'5" series
N.U.S. FIT II, site inspection 3/4/83
Geology and groundwater resources of Union Co., No. 76-73.

ATTACHMENT D-9

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D980530265

II. SAMPLES TAKEN No samples were taken

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air Quality	HNU photoionization detector; no measurements above background during the site inspection.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Martin O'Neill, NUS Corp, Edison, NJ (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Martin O'Neill, NUS Corp, Edison, NJ

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

No other field data was collected.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS FIT II Site Inspection 3/4/83

EPA FORM 2070-13 (7-81)

ATTACHMENT D-10

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D980530265

II. CURRENT OWNER(S)

01 NAME	ACP Trust			02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	P.O. Box 222			04 SIC CODE	651-6512
05 CITY	Garwood	06 STATE	NJ	07 ZIP CODE	07207
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	

PARENT COMPANY (If applicable)

08 NAME				09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				11 SIC CODE	
12 CITY		13 STATE		14 ZIP CODE	
08 NAME				09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				11 SIC CODE	
12 CITY		13 STATE		14 ZIP CODE	
08 NAME				09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				11 SIC CODE	
12 CITY		13 STATE		14 ZIP CODE	
08 NAME				09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				11 SIC CODE	
12 CITY		13 STATE		14 ZIP CODE	

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	
01 NAME				02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				04 SIC CODE	
05 CITY		06 STATE		07 ZIP CODE	

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS Site Inspection 3/4/83

Interview with Charles Piscitelli, Warehouse Manager, ACP Trust

EPA FORM 2070-13 (7-81)

ATTACHMENT D-11

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE: NJ | 02 SITE NUMBER: D980530265

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: ACP Trust	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): P.O. Box 222	04 SIC CODE: 651-6512
05 CITY: Garwood	06 STATE: NJ / 07 ZIP CODE: 07027
08 YEARS OF OPERATION: 8 yrs	09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE: / 16 ZIP CODE:

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME: Bell Factory Terminal	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 608 South Ave.	04 SIC CODE: 651-6512
05 CITY: Garwood	06 STATE: NJ / 07 ZIP CODE: 07207
08 YEARS OF OPERATION: 4 yrs	09 NAME OF OWNER DURING THIS PERIOD:

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE: / 16 ZIP CODE:

01 NAME: Magnus Chemical Co.	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 608 South Ave	04 SIC CODE: 284-2843
05 CITY: Garwood	06 STATE: NJ / 07 ZIP CODE: 07027
08 YEARS OF OPERATION: 7 yrs.	09 NAME OF OWNER DURING THIS PERIOD:

10 NAME: Economics Laboratory	11 D+B NUMBER: 00-615-4611
12 STREET ADDRESS (P.O. Box, RFD #, etc.): Osborn Building	13 SIC CODE: 284-2843
14 CITY: St. Paul	15 STATE: MN / 16 ZIP CODE: 55102
Obtained Magnus in 1964 Sold it in 1971	

01 NAME: Magnus Chemical Co.	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 608 South Ave	04 SIC CODE: 284-2843
05 CITY: Garwood	06 STATE: NJ / 07 ZIP CODE: 07027
08 YEARS OF OPERATION: 25	09 NAME OF OWNER DURING THIS PERIOD:

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE: / 16 ZIP CODE:

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Region II Files, Edison, NJ 103 (C) Form
Janice Mileo, attorney for Economics Laboratory (612) 293-2283
Charles Piscitelli, Warehouse Manager, ACP Trust

EPA FORM 2070-13 (7-81)

ATTACHMENT D-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D0980530265

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Magnus Chemical Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
608 South Ave	284-2843

05 CITY	06 STATE	07 ZIP CODE
Garwood	NJ	07027

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

ATTACHMENT D-1

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D980530265

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

ATTACHMENT D-14

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D980530265

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS FIT II Site Inspection.
EPA Region II Files, Edison, NJ

EPA FORM 2070-13 (7-81)

ATTACHMENT D-15

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D980530265

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

None

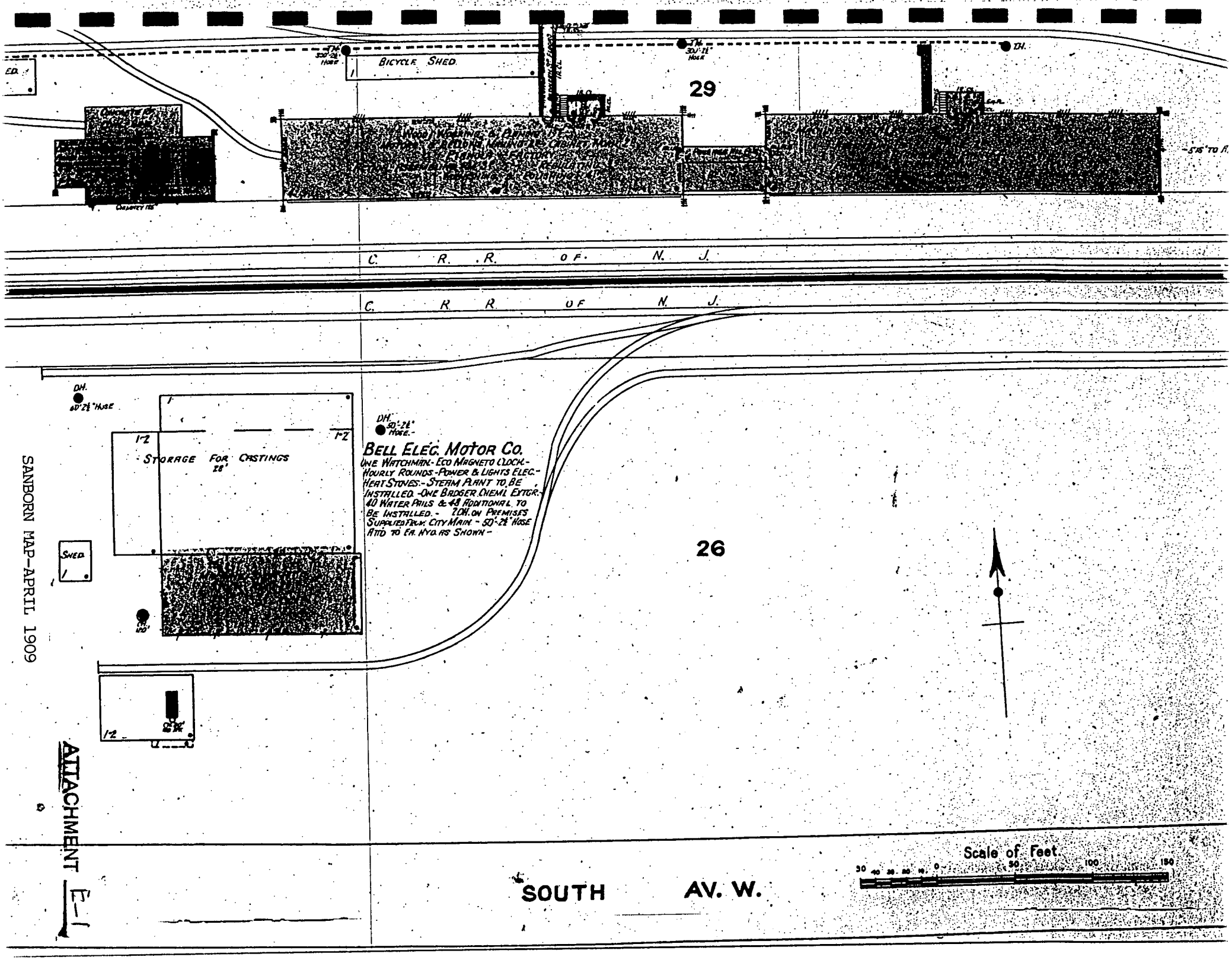
III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

NUS FIT II
Site Inspection 3/4/83

EPA FORM 2070-13 (7-81)

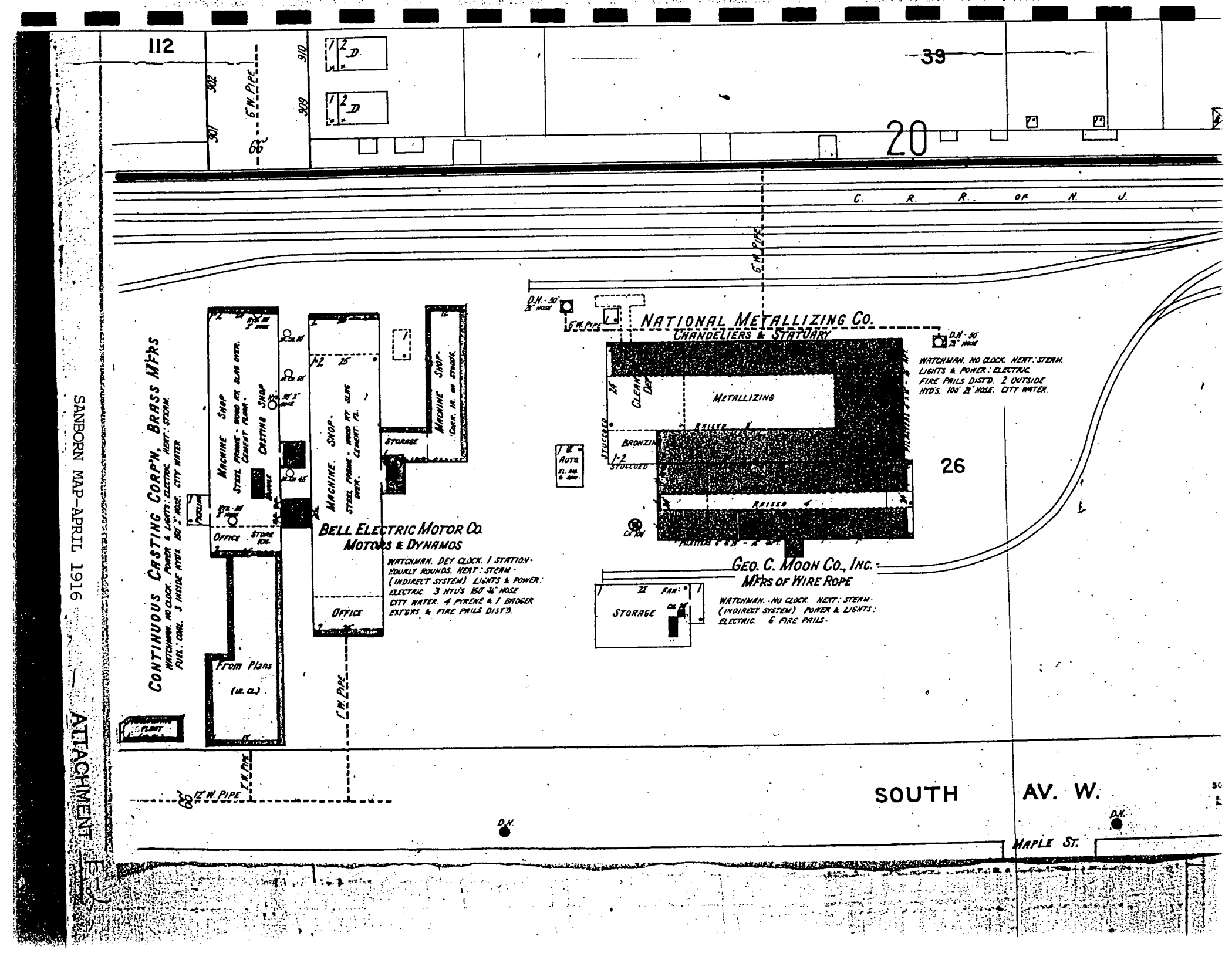
ATTACHMENT D-16

ATTACHMENT E



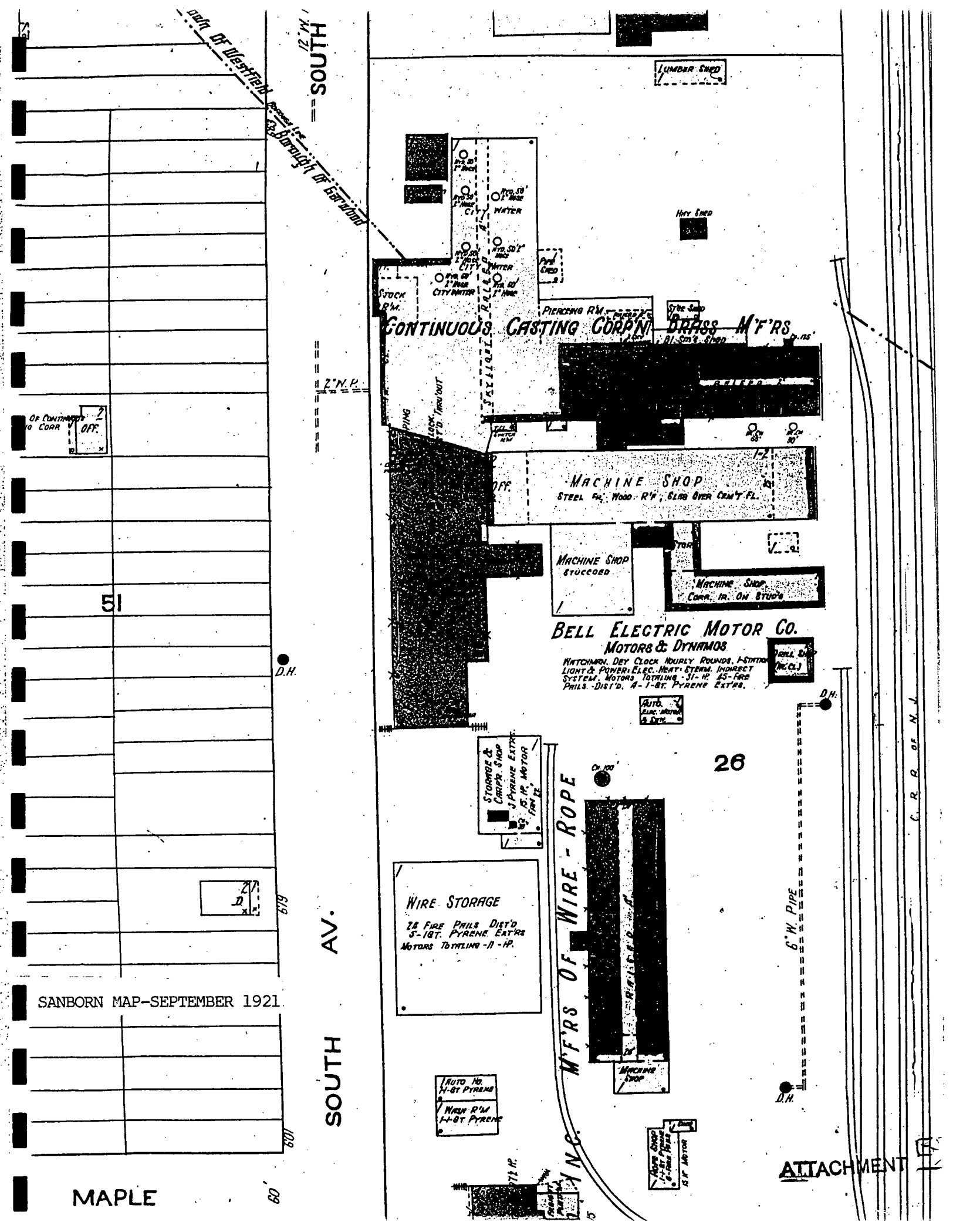
SANBORN MAP-APRIL 1909

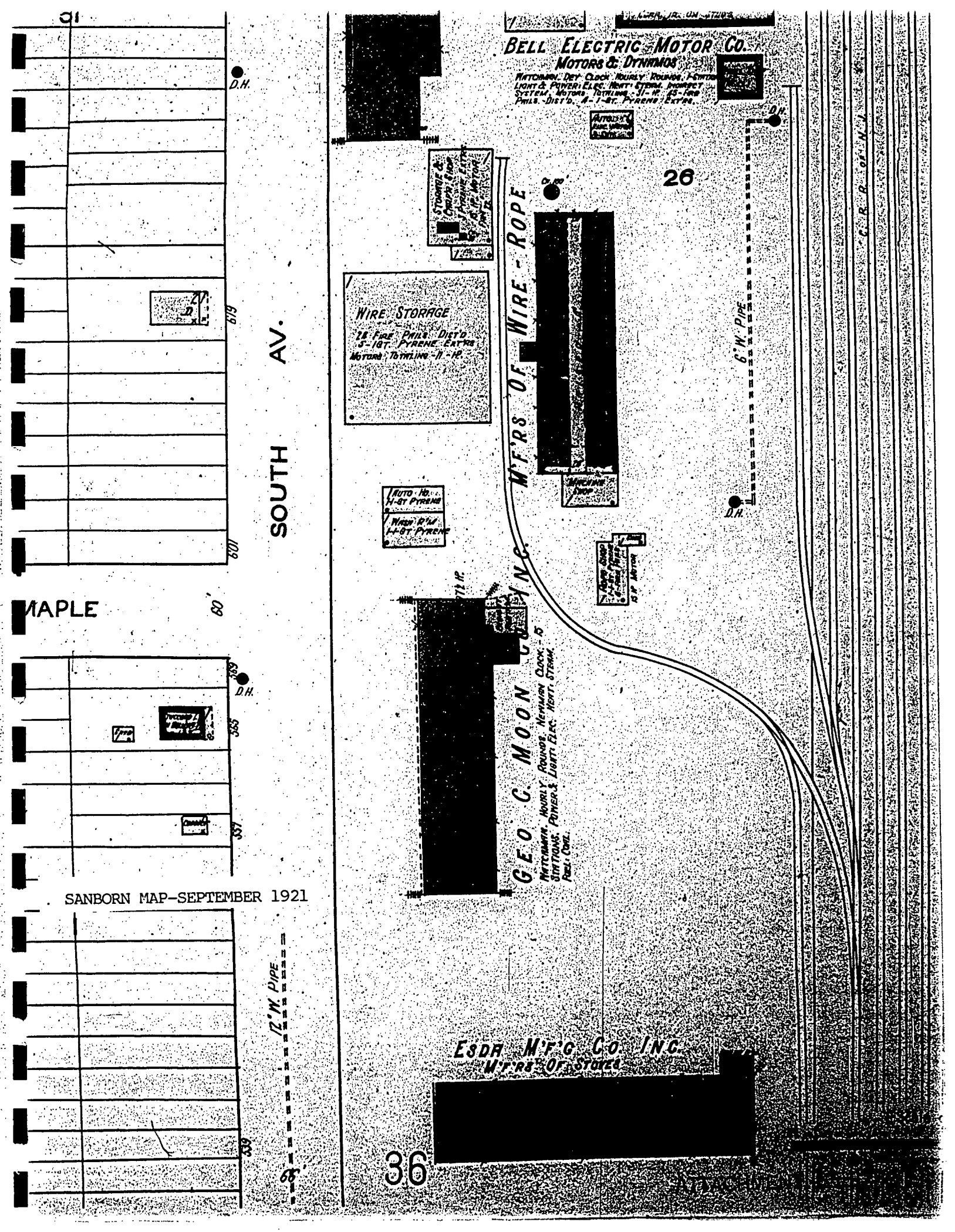
ATTACHMENT E-1

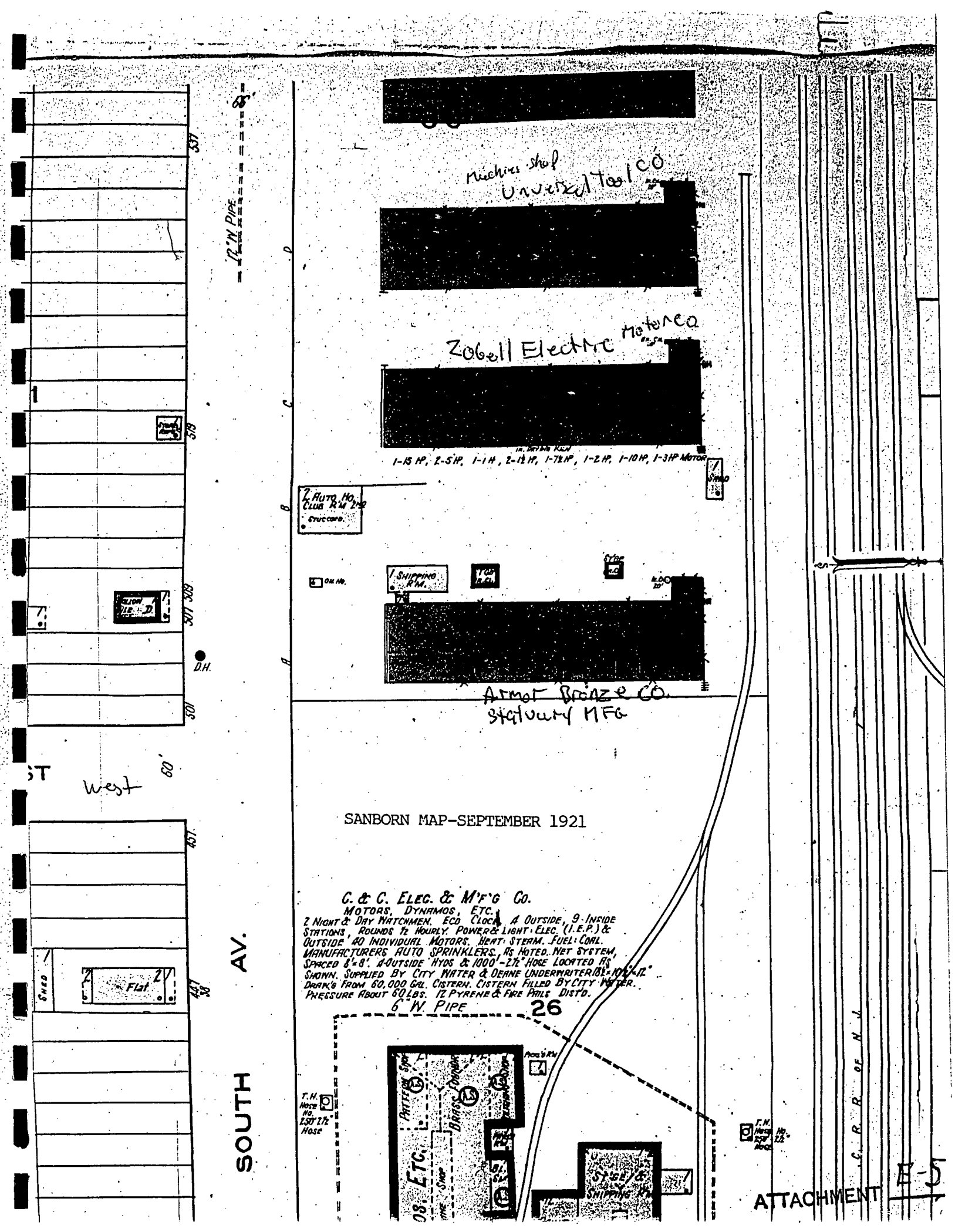


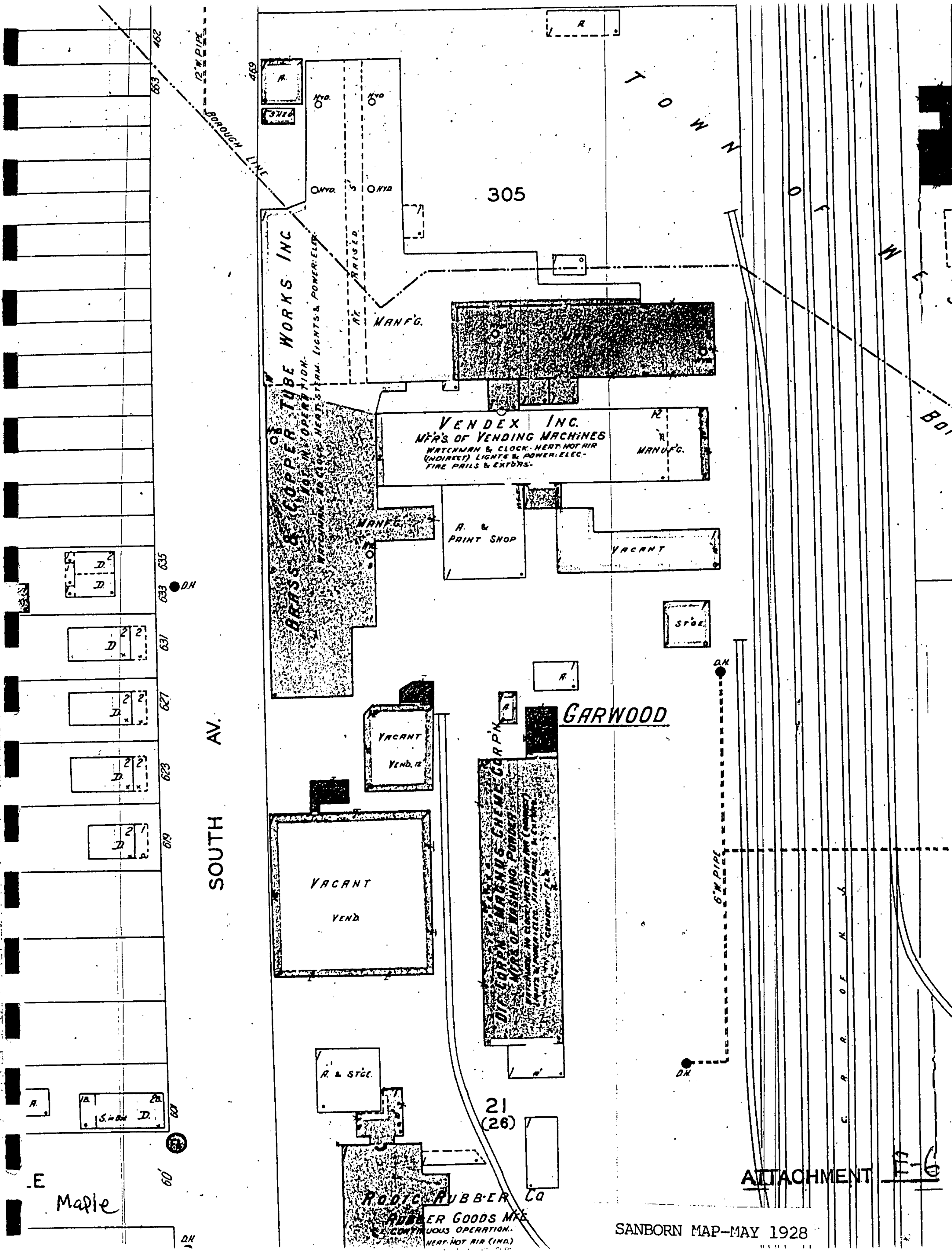
SANBORN MAP—APRIL 1916

ATTACHMENT E-1


Town Of Westfield
Proposed Line
Borough Of Garwood
SOUTH
12" W.P.
LUMBER SHED
HAY SHED
PIPE SHED
STOCK P'M.
PIERCING P.M.
CONTINUOUS CASTING CORP'N
BRASS M'F'RS
Pl. Sm's Shop
2" W.P.
MACHINE SHOP
STEEL FR., WOOD R'F, SLAB OVER CEM'T FL.
MACHINE SHOP
STUCCOED
MACHINE SHOP
CORR. IR. ON STUD'S
BELL ELECTRIC MOTOR CO.
MOTORS & DYNAMOS
WATCHMAN, DEY CLOCK HOURLY ROUNDS, 1-STATION
LIGHT & POWER: ELEC. HEAT: STEAM. INDIRECT
SYSTEM. MOTORS TOTALING -31- H.P. 45-FIRE
PAILS. -DIST'D. A-1-QT. PYRENE EXT'RS.
AUTO. ELEC. MOTOR & SYST.
STORAGE & CORPR. SHOP
1 PYRENE EXTR.
15 H.P. MOTOR
WIRE STORAGE
24 FIRE PAILS DIST'D
5-1QT. PYRENE EXT'RS
MOTORS TOTALING -11-HP.
M'F'RS OF WIRE - ROPE
MACHINE SHOP
AUTO HD.
1-1-QT PYRENE
WASH R'M
1-1-QT PYRENE
HOSE SHOP
1-1-QT PYRENE
6-FIRE PAILS
15 H.P. MOTOR
6" W. PIPE
C. R. R. OF N. J.
D.H.
51
26
619
601
SOUTH AV.
MAPLE
60'
SANBORN MAP-SEPTEMBER 1921
ATTACHMENT

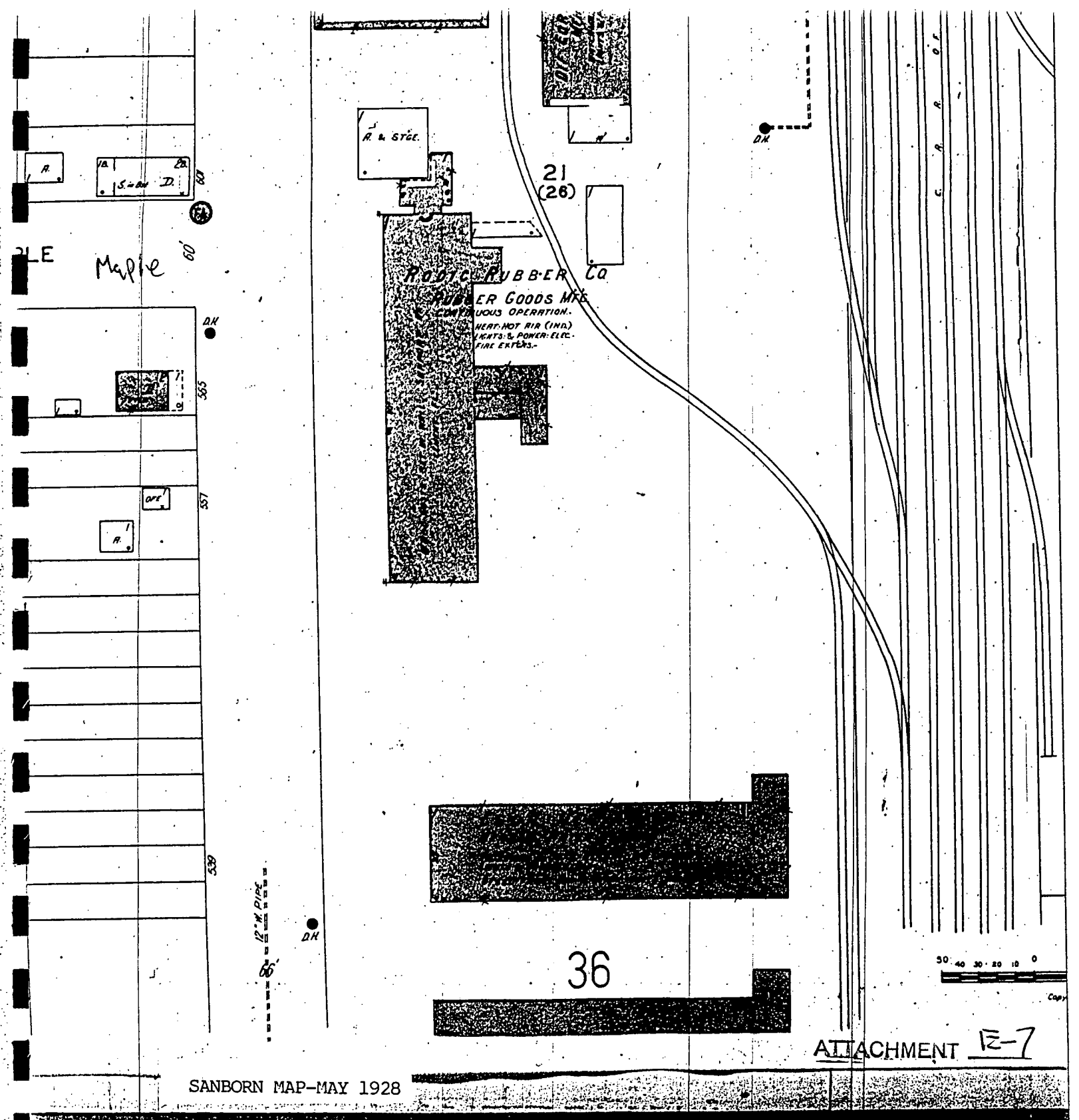

SOUTH AV.
MAPLE
BELL ELECTRIC MOTOR CO.
MOTORS & DYNAMOS
WIRE STORAGE
W'F'RS OF WIRE - ROPE
GEO. C. MOON CO. INC.
ESDR M'F'G CO. INC.
M'F'RS OF STOVES
6" W. PIPE
12" W. PIPE
D.H.
26
36
SANBORN MAP-SEPTEMBER 1921


Machine shop
Universal Tool Co
Zobell Electric Motor Co
1-15 HP, 2-5 HP, 1-1 H, 2-1½ HP, 1-7½ HP, 1-2 HP, 1-10 HP, 1-3 HP MOTOR
Armor Bronze Co.
Statuary Mfg
SOUTH AV.
West
SANBORN MAP-SEPTEMBER 1921
C. & C. ELEC. & M'F'G CO.
MOTORS, DYNAMOS, ETC.
2 NIGHT & DAY WATCHMEN. ECD CLOCK. 4 OUTSIDE, 9 INSIDE STATIONS, ROUNDS ½ HOURLY. POWER & LIGHT: ELEC. (I.E.P.) & OUTSIDE 40 INDIVIDUAL MOTORS. HEAT: STEAM. FUEL: COAL. MANUFACTURERS AUTO SPRINKLERS. AS NOTED. WET SYSTEM, SPACED 8'x8'. 4 OUTSIDE HYDS & 1000'-2½" HOSE LOCATED AS SHOWN. SUPPLIED BY CITY WATER & DEANE UNDERWRITER 8"-10"-12" DRAIN'S FROM 60,000 GAL. CISTERN. CISTERN FILLED BY CITY WATER. PRESSURE ABOUT 60 LBS. 12 PYRENE & FIRE PAILS DIST'D.
6" W. PIPE
26
T.H. Hose No. 2 50' 1½ Hose
T.H. Hose No. 22
C. R. R. OF N. J.
ATTACHMENT E-5



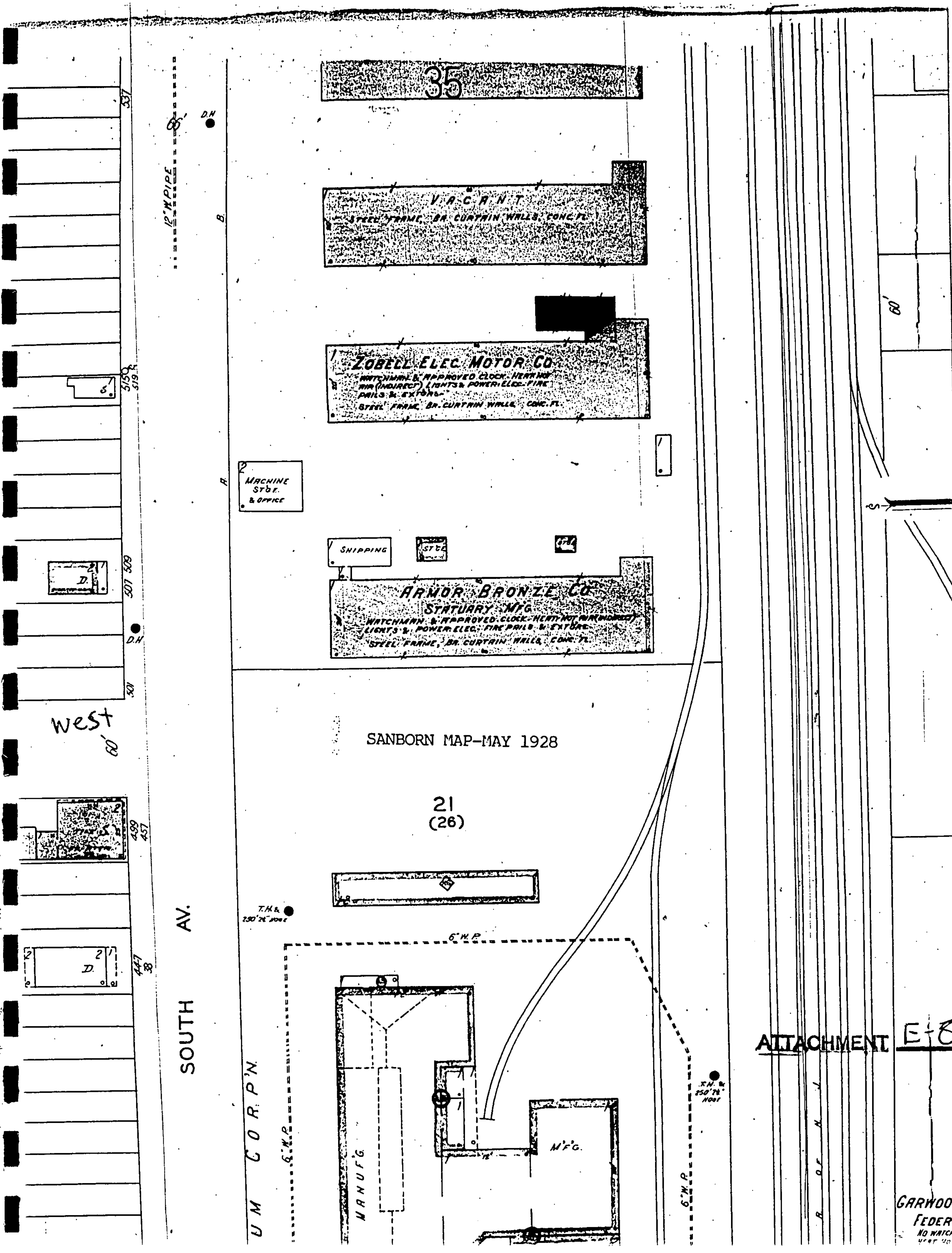
ATTACHMENT E-6

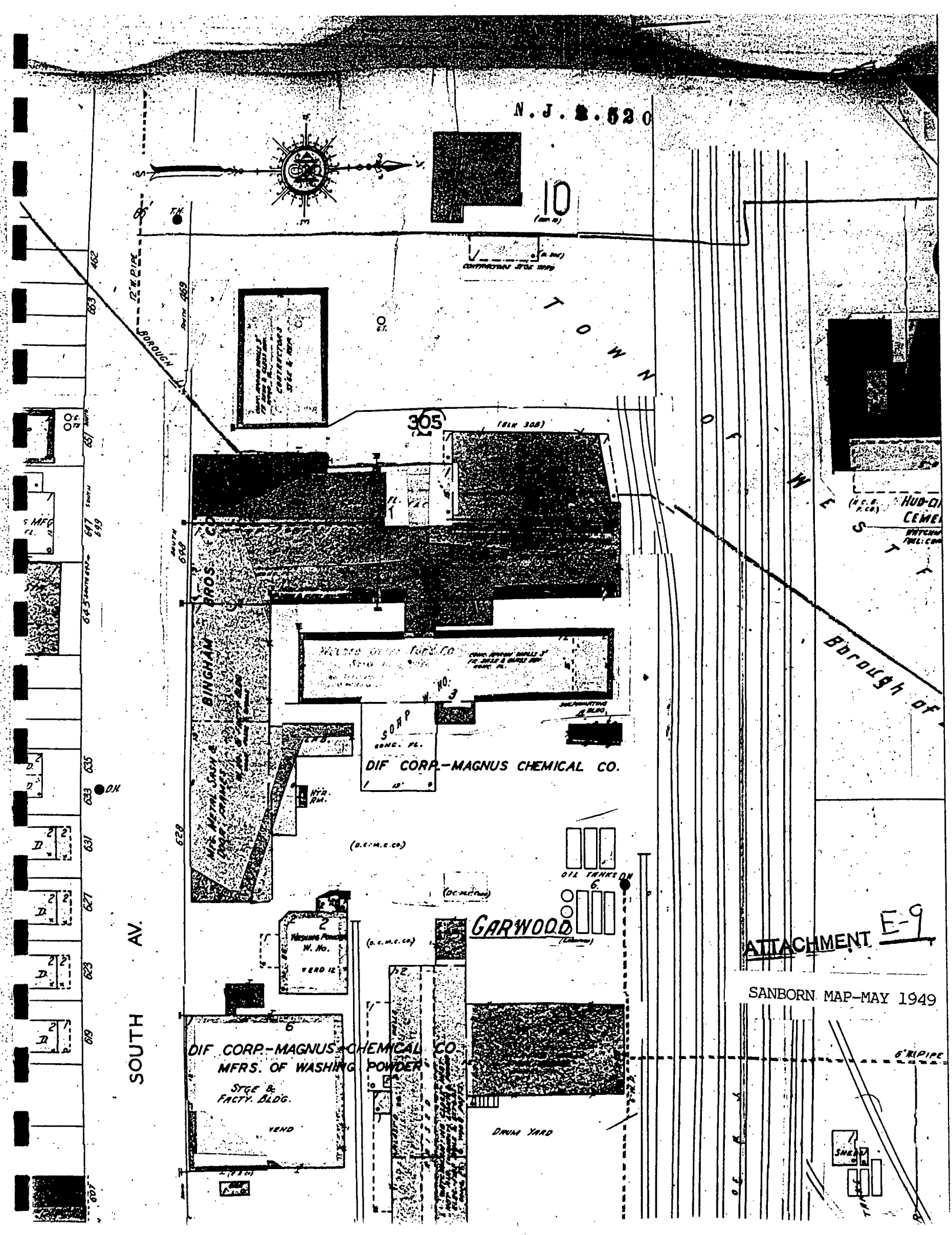
SANBORN MAP-MAY 1928



ATTACHMENT E-7

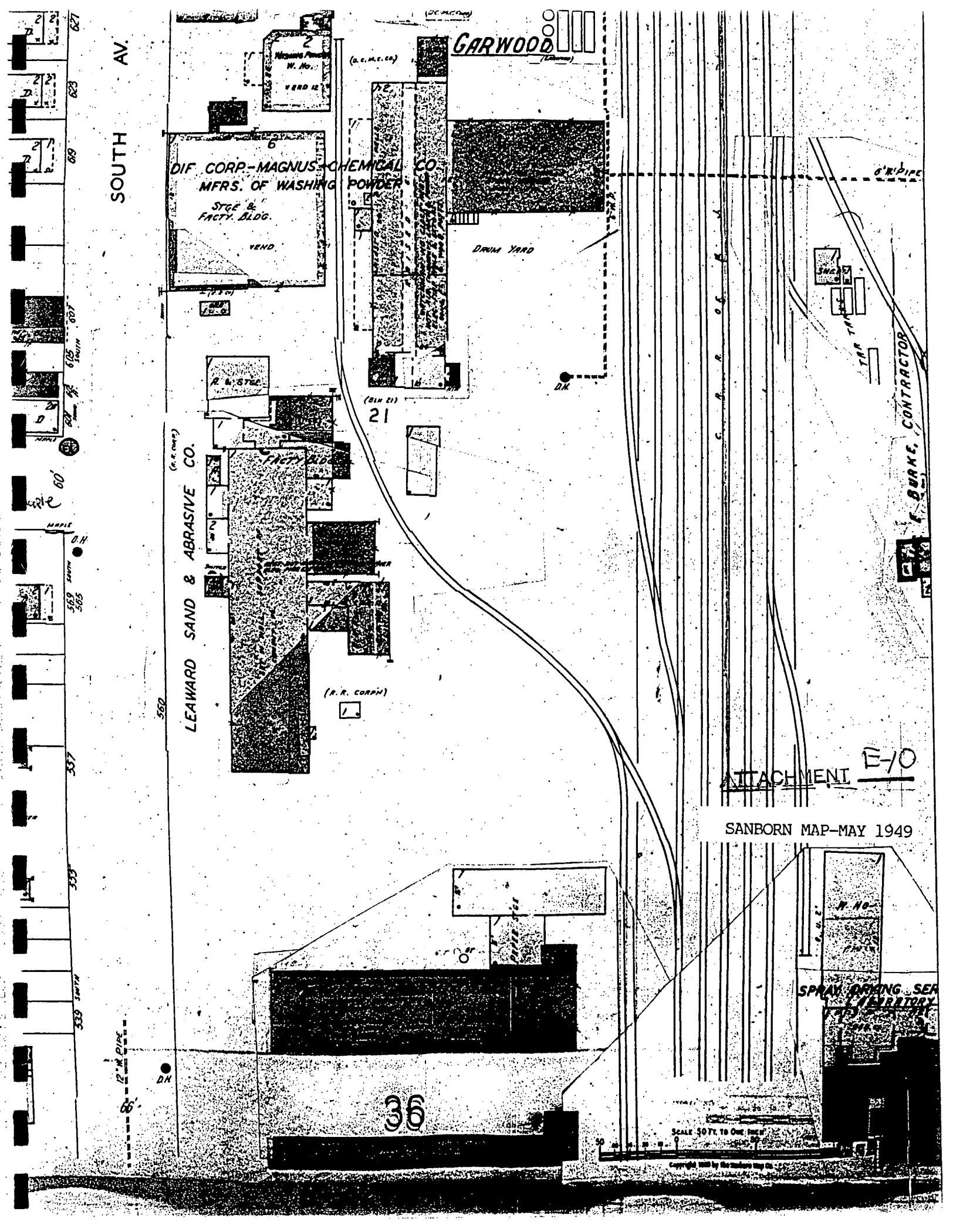
SANBORN MAP-MAY 1928


35
VACANT
STEEL FRAME, BR. CURTAIN WALLS, CONC. FL.
ZOBELL ELEC. MOTOR CO.
WATCHMAN & APPROVED CLOCK. HEAT HOT AIR (INDIRECT) LIGHTS & POWER: ELEC. FIRE PAILS & EXTGRS.
STEEL FRAME, BR. CURTAIN WALLS, CONC. FL.
MACHINE STGE. & OFFICE
SHIPPING
ARMOR BRONZE CO.
STATUARY MFG.
WATCHMAN & APPROVED CLOCK. HEAT HOT AIR (INDIRECT) LIGHTS & POWER: ELEC. FIRE PAILS & EXTGRS.
STEEL FRAME, BR. CURTAIN WALLS, CONC. FL.
12" W. PIPE
D.H
west
60'
SANBORN MAP-MAY 1928
21
(26)
T.H. & 250' 2½" HOSE
6" W.P.
SOUTH AV.
UM CORP'N.
MANUF'G.
M'F'G.
ATTACHMENT E-8
GARWOOD
FEDERA



ATTACHMENT E-9

SANBORN MAP-MAY 1949



ATTACHMENT E-10

SANBORN MAP-MAY 1949

ATTACHMENT E-11

SANBORN MAP-MAY 1949

ATTACHMENT F

ACKNOWLEDGMENT

; been impossible for the Committee to individual letter of thanks to all who have d to make this celebration possible.

ke this means to express our appreciation nk all who have contributed either in cash ı personal service, to further in this man- erest of the Borough.

e advertisers in this program, who have terially to make it what it is, we tender ciation and hope that the ads will bring ased business.

e Factories and Fraternal Associations contributed freely we are greatly in-

eople of Garwood have proven that they rs for th r town and it is the wish of this at th celebration may in a measure a be r understanding among us all og with one goal, a Bigger and od.

Signed,

COMMITTEE.

ATTACHMENT F-1

BOROUGH OF GARWOOD

1928

CONRAD H. KEIM, Mayor

Councilmen

GEORGE G. GREEN, President

CHARLES SCHOENWISNER

JAMES L. FISHER

HENRY W. ACKER

GUSTAVE NEAD

C. L. JOHNSON

Clerk
W. S. McMANUS

Assessor
JOSEPH H. DEREMER

Collector-Treasurer
DANIEL F. SNYDER

Attorney
CARROLL K. SELLARS

Engineer
LEWIS T. CHURCHILL

Building Inspector
EDWARD FROWERY

Recorder
F. W. EWALD

Overseer of Poor
ANNA LUSTER

Street Commissioner
W. J. KELLY, JR.

POLICE DEPARTMENT

HENRY W. ACKER, Chief

John J. Brewer Albert W. Ashfield

Special Marshals

Robert Sargent Wm. Kleeman W. J. Kelly, Jr. Joe Smaidginnis

FIRE DEPARTMENT

Liberty Hose Co. No. 1

Meetings First Wednesday of Each Month

Chief
GEORGE G. GREEN

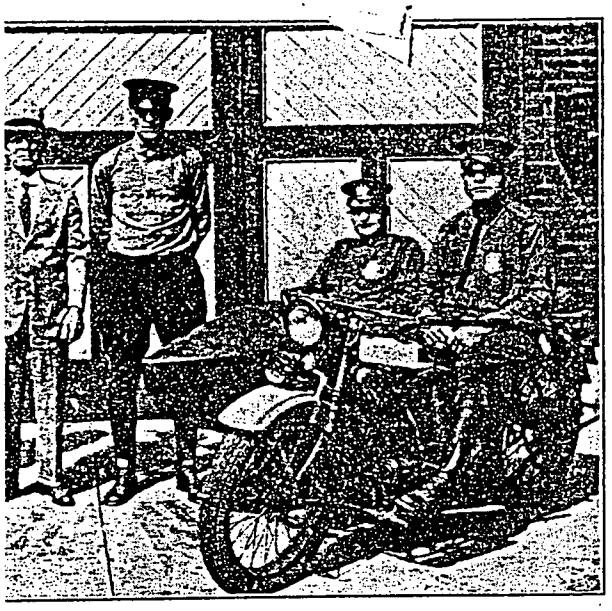
Assistant Chief
CHARLES WHITE

Secretary
FRED COWELL

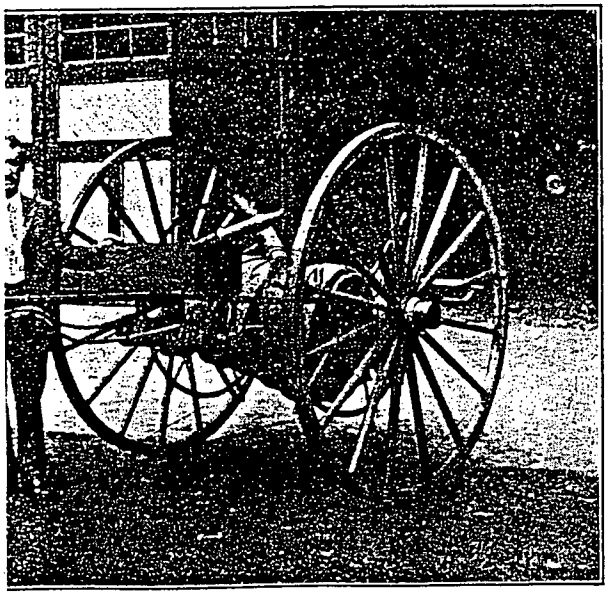
Treasurer
WILLIAM HEFELE

Foreman
THOMAS BRITTAIN

Assistant Foreman
WILLIAM KLEEMAN



VOOD'S POLICE FORCE



D'S FIRE DEPARTI ENT — 1903
iffe is Shown With The Hose Cart

ATTACHMENT F-2

and services were started under the pastorate of Rev. Herman Retter. At first services were held only in German, but more recently, because of the influence of the young people, a change was made and now the Sunday School is conducted entirely in English and services on the first, third and fifth Sundays in English, on the second and fourth Sundays in German. Rev. Karl Schauer followed Mr. Ritter as pastor; Rev. W. Petersman followed Mr. Schauer, and Rev. Paul Lehmann, the present pastor, succeeded Mr. Petersman. At first the church had a struggle to make ends meet but is now on a good financial footing and has greatly enlarged and beautified the building.

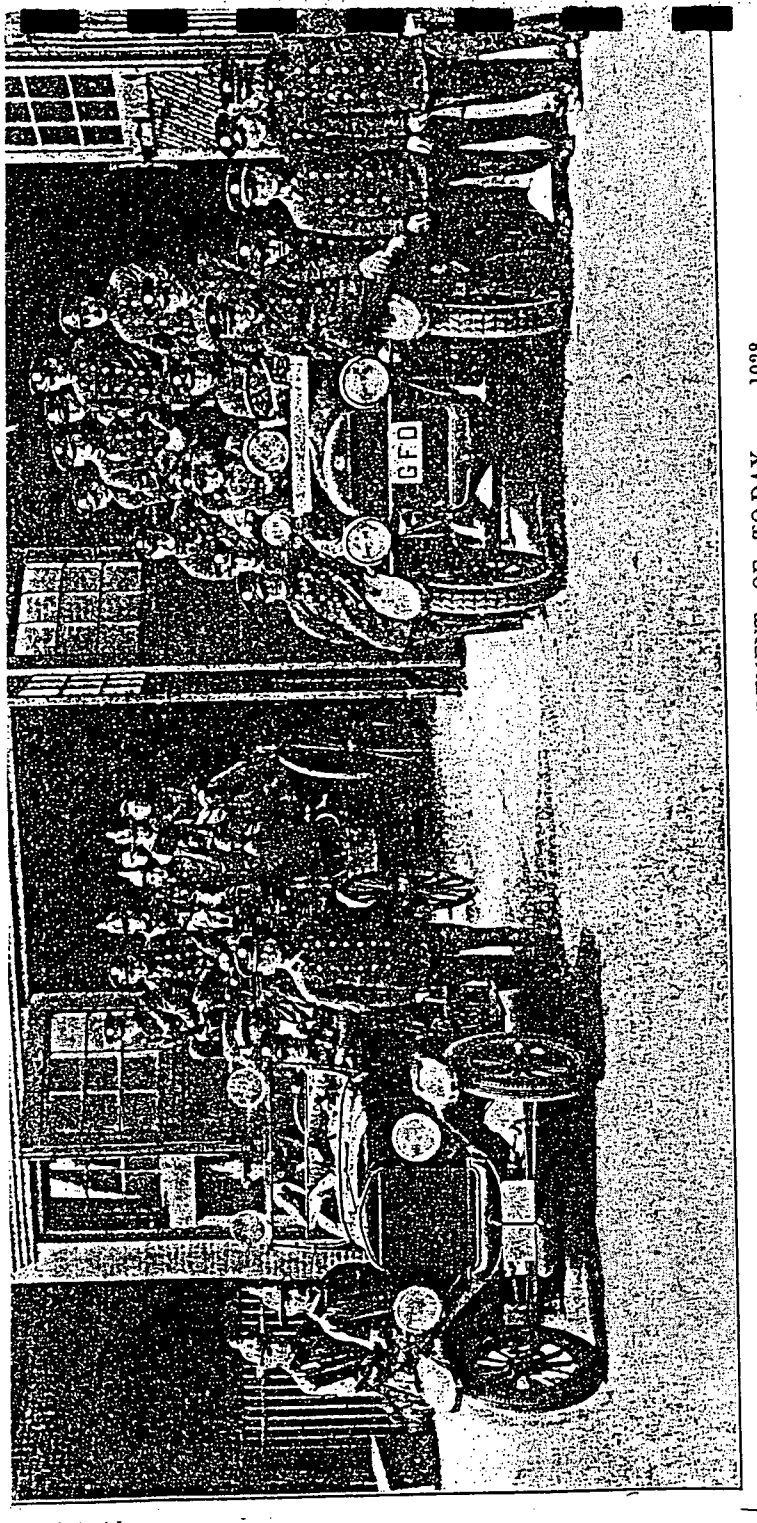
The Garwood Catholic Club was organized on May 14, 1913, with seven members. Within two years the club had grown to one hundred twenty, and by 1917 purchased the property on Second Avenue on which the Church of St. Anne now stands. It was mainly through the efforts of the club, ably assisted by the Rev. James J. McDonald, rector of St. Michael's Church, Cranford, that the structure of St. Anne's was erected at a cost of $75,000. The cornerstone for St. Anne's Roman Catholic Church was laid on July 25, 1926, and the structure was completed and occupied in May, 1927. The church will for many years be a monument to the zeal and perseverance of the Catholic Club now organized as the Holy Name Society of St. Anne's.

Factories

Garwood's growth and prosperity has been intimately connected with the development of her industries. Beginning with the Hall Signal Company in 1892, factory after factory has sprung up until there are at present fifteen different establishments. Garwood owes its position as "The Industrial Center of Union County" to the advantages derived from its railroad facilities, being situated on one of the principal trunk lines of the East. The factories are a great asset to the borough not only because they offer employment to many residents, but also because of the revenue received in the form of taxes which has made it possible to provide the splendid school facilities and municipal improvement which would otherwise have been impossible.

A list of the factories together with the products which they manufacture is given below:

Aeolian Company, Player pianos, organs.
Anchor Post Iron Works, Fences, Iron Railings.
Armor Bronze, Bookends, Art Objects, Lamps and Smoker Stands.
Beckley Perforating Company, Revolving Screens of perforated metals.



GARWOOD'S FIRE DEPARTMENT OF TO-DAY — 1928

ATTACHMENT F-3

Bowen Research Laboratories, Now experimenting on dry fruit and juices.

Dif Corporation, Household Cleaning Materials.

Esda Mfg. Company, Automatic Water Heater.

Excel Asbestos Company, Asbestos Packing.

Federal Foundry Co., Soil Pipes and Iron Castings.

Klenzig Mfg. Co., Cleaning Fluids.

Knickerbocker Ice Company, Artificial Ice.

Magnus Chemical Company, Inc., Industrial Cleaning Materials.

Newhall Company, Shield Drills, Cable Clamps, Toggle Bolts.

Pattern and Model Shop, Pattern Makers.

Pioneer Products Corp., Celluloid and Metal Novelties.

Rodic Rubber Company, Hard Rubber Articles.

Thatcher Furnace, Stoves, Boilers, Radiators.

U. S. Aluminum Company, Aluminum Castings.

Vendix Mfg. Co., Pencil Vending Machines.

Zobell Electric Company, Electric Motors.

Post Office

In 1894 the post office was started in a corner of the railroad station with Leonard G. Cohen as the first postmaster. As the mail increased in volume the post office was moved to a corner of the newstand now occupied by David Burke. In 1910 the volume of business necessitated another change to a building on North Avenue just east of Centre Street. Later the office was changed to the Silberg Building on South Avenue and Centre Street and on June 1st, 1926, a change was again made to the present commodious building especially erected by Mr. Silberg to house the post office. So large had the postal business become by 1924 that free delivery was instituted. There are two regular deliveries daily with post boxes situated at convenient points throughout the borough, from which frequent collections are made.

Bank

On January 15th, 1923, the First National Bank was opened for business. This institution has been a great asset to the borough as it was formerly necessary for residents as well as the Council and Board of Education to carry their accounts in out of town banks. The steady growth of the bank is a testimony to the foresight of those men who gave of their time and money in order that the town might have modern banking facilities. For several years, the bank has promoted thrift among the school children by having a school savings department in which school children have deposited a total of $1,933.55 during the present year.

ATTACHMENT G

Garwood's Fiftieth Anniversary Celebration

COMMEMORATING FIFTY YEARS
OF MUNICIPAL PROGRESS

June 28 to July 5, 1953

Souvenir Journal

ATTACHMENT G

Patsy J.
, Richard R.*
ski, Richard
ski, Theodore
s, Louis C.
rd, Francis
one, Edward J.
one, John R.
o, Alex
to, John M.
to, Louis
to, Michael
John
t, Edward R.
Earl B.
er, Herbert G.
Frank L.
Joseph J.
Robert E.
William A.
, William J., Jr.
ter, Leonard
dt, Ferdinand J.
dt, John J.
ider, Jean
ider, James C.
ider, John
ider, Joseph B.
zer, George C.
nwisner, Charles J.
tz, Charles
tz, Leo A.
enke, Donald*
irz, William
s, Kenneth
s, Richard K.
s, Robert
y, Walter M.
, Philip J.
s, Charles W.
s, Walter R.
smith, John F.
smith, Stephen C.
y, Edward A.
ne, Albert
ne, Anthony J.
ne, Joseph
ne, John V.
ne, Ray J.
ht, George W.
, John W.
el, Alfred J.
h, Edgar L.
h, Raymond W.*
h, George L.
linski, Adam J.
lley, Walter T.
weyko, Thomas
y, John
y, Joseph
enberg, Hudson B.
anza, Gustave C.
anza, Peter G.
anza, Samuel A.
ng, Donald J.
ro, Michael

in Action

Stacey, Richard W.
Stacey, William E.
Stallone, Leonard
Stalkowski, William V.
Standora, Edward, Jr.
Steffen, June A.
Steffen, Richard W.
Stegemoen, Inguald M.
Stiles, Norman S.
Stokes, Henry
Stokes, James M.
Stranacher, Arthur R.
Stranacher, Robert
Strzalkowski, Arthur
Strzalkowski, Stanley J.
Stuart, Robert
Sullivan, Cornelius G.
Sumpolec, Joseph A.
Sutton, William
Svenda, George
Szabo, Frank J.
Szanyi, Alexander
Szanyi, John A.
Szoke, Louis J.
Tabor, Joseph
Tabor, Michael J.
Tabor, Thomas J.
Tabor, Walter J.
Taraskiewicz, Leonard
Taylor, Dorothy M.
Taylor, Thomas F.
Thomas, Alfred
Tiller, Frank
Tillish, George*
Tirone, Michael
Todd, Kingsley L.
Todd, Robert E.
Todd, Roger
Todisco, Joseph
Tomchak, Frank A.
Tomchak, Walter R.
Tomczyk, Edward F.
Tomczyk, Maryon
Tomredle, Charles
Toth, Gabor G.
Toth, Julius C.
Trano, Bernard F.
Tranor, Grover C.
Treadway, Bernard E.
Tripka, Edward S.
Troeber, Howard
Uhlig, Paul C., Jr.
Ulrich, Henry W.
Urban, Taras
Usher, Arthur W.
Usher, Walter L.
Veninata, Carmen J.
Ventrillo, Michael P.
Vitullo, Nick
ViPerina, John H.
Walker, Mary
Walsh, Bernard P.
Walsh, James
Walsh, Raymond
Walter, Eugene
Walters, R. O.

Wanat, Anthony
Wanat, Frank
Wanat, Harry
Wanat, John
Wanca, John
Wanca, Frank
Warchol, Daniel
Warchol, Frank
Warchol, Frank
Warchol, John
Warchol, John
Warchol, Michael
Warchol, Michael
Warchol, Peter
Ward, Robert H.
Warner, Alvin L.
Wasowski, Stanley J.
Wasowski, Walter M.
Watson, Neil V.
Waychik, Albert
Weber, Donald B.
Weber, Ralph E.
Wehrum, Fred
Weinzierl, Edward J.
Weinzierl, Raymond A.
Welch, Charles E.
Welch, William L.
Wenzel, Alfred E.
Wenzel, Louis J.
Wenzel, Walter A.
Wenzel, William
Wepprecht, Charles F.
Wesley, Adolph
Wesp, Howard E.
Whitcombe, Warren L.
White, Kenneth
White, Harold R.
White, Wesley T.
Wild, Charles H.
Wild, Douglas W.
Wild, Edward G.
Williams, George J.
Williamson, Russell A.
Woienski, Thomas E.
Wojtkiewicz, Frank*
Wojtkiewicz, John
Wolf, John W.
Woodruff, Ralph S.
Wulin, Chris
Wulin, George
Wyres, Horace E.
Wyres, James H.
Wyres, Jerry J.
Wyss, William P.
Yanush, John C.
Yawlak, Frank
Yawlak, John
Yawlak, Michael
Yuhas, Joseph A.
Zabielski, John J.
Zalonis, Alvin
Zalonis, Victor J.
Zazeski, John
Zazeski, Peter S.
Zazeski, Stanley
Zazikoff, John C.

ATTACHMENT G-2

Garwood's Industries

DIAMOND EXPANSION BOLT COMPANY

Started in 1888 by Henry B. Newhall. Moved to Garwood in 1907. Home office moved from New York to Garwood in 1926. Products are mainly expansion bolts and allied products which are used for making attachments to masonry construction. Also makes pole line specialties used by Bell System and independent telephone companies. Has branches in Boston, New York, Philadelphia, Detroit, Chicago, St. Louis, Atlanta, Dallas, Los Angeles, San Francisco, Seattle, Montreal, Toronto, Winnipeg, Vancouver and Havana. Officers include Carleton H. Bunker, President; Fred H. Adami, Executive Vice-President; Ethan N. Hescock, Vice-President; John A. Wright, Vice-President-in-Charge-of-Sales; Roscoe S. Lathe, Treasurer, and David Tulloch, Secretary. Employs 216 people.

BEST-WAY WATERPROOFERS, Inc.

Incorporated November, 1951. Temporary quarters at 92 Third Avenue, with new quarters being erected in North Avenue. Officers include Ralph DiBattista, President; Robert C. Malenchek, Vice-President; William E. Malenchek, Secretary. Employs 11 people. Specialists in residential, commercial and industrial waterproofing.

EDWARD HANDLER & SON

Manufacture dental motors, polishing and dust collecting machines, dental flasks, compresses and presses. Located at 86 North Avenue in November, 1948, after twenty-eight years in Newark. Regret they did not move here long ago.

EXCEL TOOL & DIE CO., Inc.

Designs and manufactures tools, dies, jigs, fixtures, gauges and special machinery. Located at 628 South Avenue. Founded in 1943 in Rahway and moved to Garwood in December, 1952. Employs 80 people. Officers include Stephen G. Gillich, President; Joseph Forster, Vice-President and Superintendent; Mrs. Mildred Gillich, Executive Secretary; Anthony H. Blanken, Jr., Plant Manager; Mrs. Marie Grillo, Corresponding Secretary.

DEREMER BUILDING SUPPLY CO.

Supplies all types of building materials, specializing in millwork. Located at 401 South Avenue. Incorporated in October, 1951. Successor to Albert Deremer Construction Company, operating in Garwood since 1906. A. C. Deremer, proprietor.

SONOCO PRODUCTS COMPANY

Manufactures paper tubes, cores and spools. Began operations in Garwood in 1934. Employs 130 people. Headquarters in Hartsville, S. C. Garwood plant is under the direction of G. W. Blunt White, Vice-President. Resident General Manager is Ralph T. Posey.

ACCURATE BUSHING COMPANY

Established in 1941 as a General Machine Shop. Now specializes in making precision parts.

GARWOOD METAL COMPANY, Inc.

Bought business of old Garwood Metal Company in September, 1948. Specialize in steel, stainless steel, brass and aluminum fabrication and welding. Fabricate vending machines, filing cabinets, and parts for the Army, Navy and Air Force. Located at 231 North Avenue.

STANDARD NIPPLE WORKS

Started operation in Garwood in June, 1951, after 25 years in Newark. Located at 15 North Avenue. Manufacture steel and brass pipe fittings used for building and industrial construction. Officers include N. H. Sugarman and J. J. Gillet. Employ 14 people.

HEFLER-SNYDER CO.

Started operation in Garwood in 1921 under name of Joseph F. Burke Co. Purchased in 1944 by Hefler-Snyder. Manufactures bituminous road materials of all types, and specializes in industrial paving. Officers include Allen Snyder, President; Burton E. Dickerman, Vice-President, and Arthur Stokey, Treasurer. Will move main office from Plainfield to Garwood this year. Employs 58 people.

LA BELLE CLEANERS & DYERS

Founded in January, 1928, by James Stavros, H. Stavros and T. H. Vagelos. Located at 518 North Avenue.

BECKLEY PERFORATING COMPANY

Started by Albert J. Beckley in Meriden, Conn., in the 1890's. Moved to Garwood in November, 1905. Officers include Mrs. C. D. Gilpin, President; Thomas O. Young, Jr., Vice-President; Russell J. Freeman, Secretary, and Mary Gilpin Vander Meulen, Treasurer. Employs 65 people.

GARWOOD SURGICAL INSTRUMENT MANUFACTURING CO.

Founded in November, 1940, at 354 North Avenue by William Martin and Gustave A. Huber. Manufactured precision stainless steel instruments to meet the requirements for eye, ear, nose and bone surgery for the Armed Forces during the war years, now specializes in the manufacture of manicure and pocket implements. Officers include Gustave A. Huber, President and Treasurer; Fred A. Kronseder, Vice-President and Factory Manager; Agnes Huber, Secretary; Marian E. Esposito, Assistant Secretary and Office Manager. Employs 25 people steadily, 60 during peak production. Expects to increase number of employees under current expansion program.

SPRAY DRYING SERVICE

Established in 1936 to meet specialized demand in the drying field. Offers custom drying service for experimental and development work. Located at 501 North Avenue. Officers include Charles P. Bailey, President; William E. Horr, Treasurer, and Charles Mackay, Secretary.

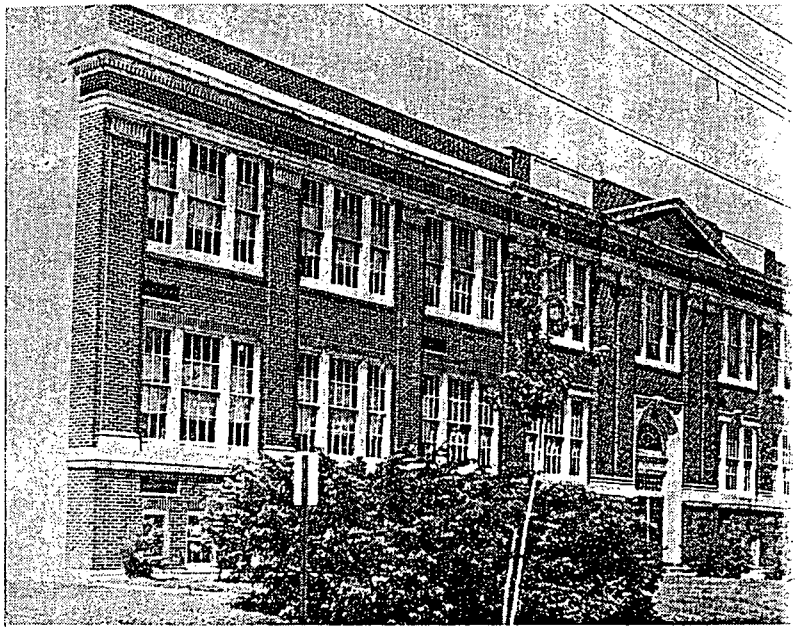
WADELL EQUIPMENT COMPANY

Founded in 1944 by George Wadell. Originally manufactured automotive maintenance equipment, subsequently turned to aeronautical maintenance tools. Purchased in 1949 by the Massari Brothers Machine Company, founders of the Accurate Bushing Company. Located at 101 South Avenue. Employs 50 people.

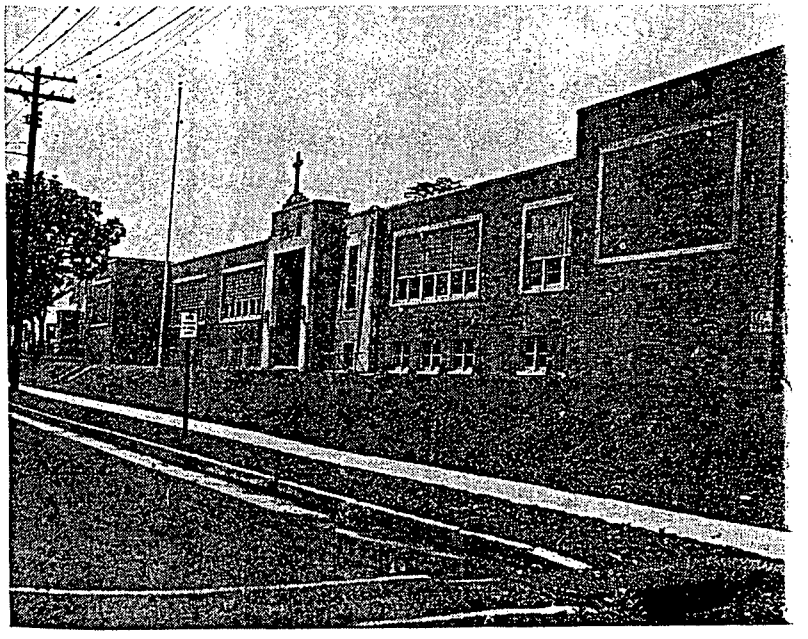
MAGNUS CHEMICAL COMPANY

Founded in 1921 in Brooklyn. Moved to Garwood in 1928. Makes many kinds of cleaners for home and industry. Affiliated companies include the Dif Corporation, the Marine and Power Plant Service Division, the Equipment Division and Industrial Processing Division. Officers include W. M. Campbell, President; D. Blanchard, Vice-President, Sales; R. W. Mitchell, Vice-President, Production; W. M. Garbe, Treasurer, and H. Y. Barrow, Secretary.

ATTACHMENT C-3



LINCOLN SCHOOL



ST. ANNE'S PAROCHIAL SCHOOL

NHN TOOL & DIE COMPANY

Started in a garage at 11 Cedar Street in November, 1941. Moved to 201 South Avenue in 1943. Manufactures tools, dies, jigs, gauges and special machinery. Also makes parts for television and for light meters. Employs 18 tool and die makers. Officers include Joseph Hoefele, President and Treasurer; Walter E. Hoefele, Vice-President; Flora Hoefele, Secretary, and William H. Durow, Jr., General Manager.

FIBRO CORPORATION

Started February 18, 1946, by Frank, Louis, Jerry, John and Albert Fontenelli — five brothers from whom name is derived. Manufacturers of all types of molds for plastic industry, die casting dies, tools, jigs, fixtures and special machinery. Plastic injection molders of all types of Thermo-Plastics. Started with 2 employees, now employs 40.

LERMER PLASTICS, Inc.

Moved to 502 South Avenue in January, 1952, from Newark, where they had been in business for 35 years. Manufacture plastic containers and injection molded articles. Employ 35 people.

PHOENIX ASBESTOS MANUFACTURING COMPANY

Established in 1890 in New York City. Began operations at 403 South Avenue in 1917 under name of Excel Asbestos Manufacturing Company. Make complete line of mechanical packings and gaskets. In addition to asbestos, they also use lead, teflon, fiber glass and rubber. Plant is operated by Carlton W. Blank, son of the founder.

MASSACHUSETTS PRODUCTS CORPORATION

Moved to 231 North Avenue in September, 1948. Make plastic novelties including cigarette cases, letter openers, tie racks, salt and pepper shakers, novelty boxes and canteens.

ROLLER CORPORATION OF AMERICA

Started at 611 South Avenue in July, 1951, under name of G-R-O Printing Roller Company. Incorporated under present name in March, 1953. Manufactures exclusive rubber printing roller for letter presses. Edward Monett is President, Leo Ragonese is Plant Manager and Charles T. Dickey is Research Engineer and Chief Analyst.

THE GENERAL CELLULOSE COMPANY, Inc.

Incorporated in 1933. First Garwood plant in Thatcher Building in August, 1934. Moved to present location at 544 South Avenue in October, 1937. Make cellulose items for industrial, candy and hospital fields. Manufacture S'WIPE'S, professional towels, roll tissue and Danner Nipkins. Subsidiaries include Tissue Converting Company, Softish Products Company and Cellulose Wadding Products Company.

GARWOOD PLASTICS, Inc.

Started operations at 141 South Avenue in March, 1946. Make industrial plastic items. Officers include Max Famely and Joseph N. Scher.

BAYONNE TOOL & MANUFACTURING COMPANY

Located at 37-43 South Avenue in April, 1950. Formed in Bayonne in 1947 by Milton R. Mielech, Benjamin A. Wisniewski and John T. Soja, who still operate business. Make tools, dies, jigs, fixtures, molds, special machinery, ignitor and fuel primers for jet engines. Employs 25 people.

NATIONAL GYPSUM COMPANY

Started operations in Garwood in 1946. One of 36 plants operated by Company. Manufactures paper board which is used in Gold Bond Gypsum Wall Board and Building Lath. Company also makes paint, lime, plaster, insulation materials, asbestos shingles and siding, and acoustical products. Employs 100 people.

ATTACHMENT G-4

HEADQUARTERS, GARWOOD FIRST AID SQUAD, I.

The First Aid Squad was organized in 1939. Its members serve entirely without p and offer First Aid and Ambulance servise to the people of the community. No cha for its services.

OFFICERS
(Administrative)

JAMES T. LEONARD .....
GEORGE L. HAYDU .....
JOSEPH E. HUMENIK .....
WILLIAM GILBERT, Jr. ..... *Assi*
JAMES T. RYAN .....
ROBERT GILBERT ..... *Assi*

(Operative)

HERBERT F. PECHIN .....
HARLEY T. FERREL ..... *F*
WILLIAM MELKA ..... *Sec*
WILLIAM GRIBBLE .....
JOE SCHNAUFFER ..... *Se*

MEMBERS

Charles Christiano	Edgar Hoover	Frank Moroli	Joe Scal
Frank M. Corveleyn	Charles Horton	John Mozart	Edward
Patsy DiFabio	Francis D. Knight	Harold E. Nead	George
John L. Dugan	Michael A. Lesko	William Parisz	Henry
Fred Frey	Jules Lusardi	Eugene Perrotta	
Benjamin Froat	John G. Malko	Henry Piekarski	Willian
Theodore C. Griffin	George Miller	George Rodner	(Juni

HONORARY MEMBERS

*Albert W. Ashfield	Fred L. Cowell	Clark H.
Albert Beninati	Sal Merlo	*William
*Dennis Comiskey	Cormac P. O'Dea	Everett D
	Kenneth W. O'Leary	

TRUSTEES

Thomas F. Brittain, President — Dr. Francis M. (Karney) I
Dr. Leon J. Anson — Michael J. Scott
Bernard Steiner

* Deceased

ATTACHMENT H

NEW J[illegible]EY DEPARTMENT OF ENVIRONMENTAL PROTE[illegible]ON
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
BUREAU OF INDUSTRIAL SITE EVALUATION

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APPLICATION FOR ECRA REVIEW
INITIAL NOTICE

SITE EVALUATION SUBMISSION (SES)

This is the second part of a two-part application submittal and must be submitted within 30 days following public release of the decision to close operations or execution of an agreement of sale or option to purchase.

DATE _____

NAME OF INDUSTRIAL ESTABLISHMENT Loral Packaging Inc.

ADDRESS 520 South Avenue

CITY OR TOWN Garwood ZIP CODE 07027

MUNICIPALITY Garwood COUNTY Union

NAME OF PROPERTY OWNER Alfred Piscitelli (Pres.)

FIRM: ACP Trust T/A Bell Factory Terminal

ADDRESS: 1610 Vauxhall Road

CITY OR TOWN: Union ZIP CODE: 07083

MUNICIPALITY Union COUNTY Union

SUBMIT THE ORIGINAL PLUS TWO COPIES OF THE FOLLOWING:
(NOTE: ITEM FOURTEEN (14) REQUIRES THREE COPIES)

9. A scaled site map identifying all areas where hazardous substances or wastes have been or currently are generated, manufactured, refined, transported, treated, stored, handled or disposed, above or below ground.
IS THIS MAP ENCLOSED? ☒ YES (See Appendix # I) ☐ NO

10. A detailed description of the most recent operations and processes at the industrial establishment organized in the form of a narrative report designed to guide the Department step-by-step through a plant evaluation, with particular emphasis on areas of the process stream where hazardous substances and wastes are generated, manufactured, refined, transported, treated, stored, handled or disposed on site, above or below ground. Also identify any floor drains with their points of discharge, septic systems if applicable, seepage pits and dry wells. Please note that establishments which ceased production prior to December 31, 1983, but are subject to ECRA because of on-going storage beyond that date, must provide details on past operations.

IS THIS REPORT ENCLOSED? ☒ YES (See Appendix # II) ☐ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): _____

FOR DEP USE ONLY

Name No. _____

ATTACHMENT 14-1

11. A. A description of the types, age (installation date), construction material, capacity, contents, and locations of storage vessels, surface impoundments, landfills, or other types of storage facilities, including drum storage, containing hazardous substances or wastes.

ARE THESE FACILITIES IDENTIFIED ON YOUR SITE MAP OR DESCRIBED IN A NARRATIVE REPORT?
☒ YES (See Appendix # III) ☐ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): _____

B. The integrity of all underground tanks which contain hazardous wastes or substances must be verified. This may be accomplished in one of several ways: a) Performance of a satisfactory leak test in conformance with Criterion 329 of the National Fire Protection Association, or; b) Performance of subsurface soil investigation (soil borings and analysis), or; c) Excavate and remove the tank and establish the absence of contamination, or; d) other methods approved by the NJDEP.

ARE THE RESULTS OF THE LEAK DETECTION TEST OR THE SUBSURFACE INVESTIGATION ENCLOSED?
☒ YES (See Appendix # IV) ☐ NO

IF YOU HAVE CHECK "NO", STATE THE REASON(S): _____

12. A complete inventory of hazardous substances and wastes, including description and locations of all hazardous substances or wastes generated, manufactured, refined, transported, treated, stored, handled or disposed on site, above and below ground, and a description of the location, types and quantities of hazardous substances and wastes that will remain on site. (Attach additional sheets if necessary.) Review N.J.A.C. 7:1E, Appendix A and N.J.A.C. 7:26-8 prior to completing to ensure that all defined hazardous materials are included.

MATERIAL	QUANTITY	LOCATION (See Figure I-1)	STORAGE METHOD	TO REMAIN ON SITE (Yes or No)
No. 2 Fuel Oil	5,000 gal	1	Underground Tank	Yes
No. 2 Fuel Oil	3,000 gal	2	Underground Tank	Yes
No. 2 Fuel Oil	3,000 gal	4	Underground Tank	Yes
Gasoline	3,000 gal	5	Underground Tank	Yes
Hydraulic Oil	1,000 gal	5	Underground Tank	Yes
Waste Oil/Solvent (Toluene)	220 gal	6	55 gal. drums	No
223 Reducer (Toluene)	605 gal	6	55 gal. drums	Yes
Toluene	385 gal	6,7	55 gal. drums	Yes
Lacquers (Toluene Base)	1,430 gal	6	55 gal. drums	Yes

ATTACHMENT H-2

13. A. A detailed description, date and location on a scaled map of any known spill or discharge of hazardous substances or wastes that occurred during the historical operation of the site and a detailed description of any remedial actions undertaken to handle any spill or discharge of hazardous substances or wastes. (Attach additional sheets if necessary.)

IS THIS INFORMATION ENCLOSED? ☒ YES (See Appendix = V) ☐ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): _____

ARE THE SPILLS IDENTIFIED ABOVE INDICATED ON THE SCALED SITE MAP? ☐ YES ☒ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): These are discussed under Appendix V enclosed. There have been no known spills during the historical operations of the facility.

13. B. If this facility has an approved Spill Prevention Control and Countermeasure Plan (SPCC), enclose a copy with this submittal.

IS YOUR SPCC PLAN ENCLOSED? ☐ YES (See Appendix = _____)
☒ NO, this facility is not required to have an SPCC plan

14. A. A detailed sampling or other environmental evaluation measurement plan which includes proposed soil, groundwater, surface water, surface water sediment, and air sampling determined appropriate for the site. (This sampling plan must be developed in conformance with ECRA Regulations N.J.A.C. 7:1-3.14 et seq., and Quality Assurance Guidelines as developed by DEP)

ARE THREE COPIES OF THE SAMPLING PLAN ENCLOSED? ☐ YES (See Appendix = _____
☒ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): No significant spills or unauthorized discharges of hazardous substances are known to have occurred during the historical operations of the plant. Therefore, no sampling or environmental evaluation measurement plan is needed.

14. B. If the sampling plan includes groundwater sampling and/or the installation of monitoring wells, the applicant must complete a "Request for Hydrogeologic Assessment" form (blank form attached).

IS GROUNDWATER SAMPLING PROPOSED? ☐ YES ☒ NO

IS THE "REQUEST FOR HYDROGEOLOGIC ASSESSMENT" FORM ATTACHED? ☐ YES (See Appendix = _____)
☒ NO

ATTACHMENT H-3

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): No groundwater sampling is proposed.

15. A detailed description of the procedures to be used to decontaminate and/or decommission equipment and buildings involved with the generation, manufacture, refining, transportation, treatment, storage, handling, or disposal of hazardous wastes or substances including the name and location of the transporter, the ultimate disposal facility, and any other organizations involved.

IS THE DETAILED DESCRIPTION ENCLOSED? ☒ YES (See Appendix # VI) ☐ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): _____

16. Copies of all previous soil, groundwater and surface water sampling results, including effluent quality monitoring, conducted at the site of the industrial establishment during the history of ownership/operation by the owner or operator. Also include a detailed description of the location, collection, chain of custody, methodology, analyses, laboratory, quality assurance/quality control procedures, and other factors involved in preparation of the sampling results.

ARE HISTORICAL RESULTS ENCLOSED? ☒ YES (See Appendix # VII) ☐ NO

IF YOU HAVE CHECKED "NO", STATE THE REASON(S): _____

17. List any other information you are submitting or which has been formally requested by this agency:

None

I hereby certify that the information furnished on this application and any attachments is true. I am aware that false swearing is a crime in this State. I am cognizant that providing false information is a violation under ECRA and that I may be personally liable for penalties up to $25,000 per day.

Michael Daff
Signature

Michael B. Taugoff
Name (Print or Type)

Vice President
Title

_____
Date

ATTACHMENT H-4

APPENDIX II

DESCRIPTION OF CURRENT OPERATION

(ECRA FORM 2 - SECTION 10)

ATTACHMENT H-5

SECTION 10. DESCRIPTION OF CURRENT OPERATIONS

The Loral Packaging Company, Inc. current operations include manufacturing and labeling of plastic containers for pharmaceuticals and other products. The operations require injection molding, printing and silk-screening processes. Finished product is packaged and stored for shipping in Building O-2.

The company utilizes polystyrene, polypropylene and polyethylene as raw materials which are brought to the plant by truck and rail. It uses polyethylene/polypropylene glycol (tradename PLUROCOL) as a release agent/lubricant/destatisizer during the injection molding process and toluene solution for periodic cleaning of molding machines. Other materials used in the operation include print lacquor, print pigments and a toluene base thinner (Reducer 223). All wastes generated from the operations are disposed of off the plant site.

The polystyrene and polypropylene comes in the form of pellets which are stored in two, thirty-two foot high (15,000 gallon) tanks located adjacent to the rail spur on the north side of the property (area 3, figure 1-1). Other raw materials come in bags or boxes by trucks and are stored in Building R. The pellets from the tanks are transported by vacuum lines to the injection molding machines (buildings S and S1). Materials stored in boxes and bags are moved by fork lift truck to the molding machines. The plastic pellets are mixed with coloring pellets and fed into the molding machines. The waste materials generated during the molding process include off-spec. containers and

waste plastic produced during startup and cleanout. Much of the waste plastic is either recycled during subsequent runs or sold to other plastic manufacturers. The remainder is discarded into a trash compactor and disposed of in an approved landfill. Approximately 55 gallons of PLUROCOL is used as a lubricant/destaticizer in the injection molding process each year.

Periodically, the molding machines are cleaned with toluene. The waste toluene cleaning solution is collected and placed in drums in area 6 along with waste hydraulic oil. Approximately four, 55 gallon drums are generated every three months (880 gallons/year) which are disposed of through M&B Used Oil Service (EPA No. NJT350011219), a commercial waste oil disposal firm located in Bayonne, New Jersey.

Cooling water for the injection molding machines is obtained from an onsite groundwater production well located in the back of Building S-1. The well screen is located in the Brunswick Formation at a depth of 300 feet. Approximately 200 gallons per minute (GPM) of water is circulated through the injection molding machines as non-contact cooling water and discharged into a storm sewer which eventually discharges into the Rahway River. This groundwater use is regulated under Permit No. 26-2549 issued by the Division of Water Resources, New Jersey Department of Environmental Protection (NJDEP). The discharge water is annually analyzed for bacteria and chloride to monitor salt intrusion into the aquifer.

Print lacquor is stored in drums located in Area 6 and used by the print department. Empty lacquor drums are utilized to store waste solvent and hydraulic oil. The waste drums are later removed by a commercial waste oil hauler.

Print pigments used for labels on the containers, are stored in one-pint cans in the print department building. These pigments are thinned (when necessary) with toluene base Reducer 223 and fed into the off-set print and silk screen machines. The machines are also cleaned with rags soaked with Reducer 223. The used rags and empty one-pint pigment cans are placed in a compactor/dumpster for trash pickup and eventual disposal in an approved landfill by Highway Disposal Company of Garwood, New Jersey.

Finish products are packed and stored in building O-2 for shipment. Pallets of boxed containers and supplies are moved around the plant and warehouse by propane powered and electric powered fork lift trucks.

ATTACHMENT H-8

APPENDIX III

STORAGE FACILITY DATA

(ECRA FORM 2 - SECTION 11A)

ATTACHMENT H-9

SECTION 11 A. DESCRIPTION OF STORAGE VESSELS

Container Type	Container Material	Age	Capacity	Contents	Location*
1. Underground Tank	Steel	5 yrs.	5,000 gal.	#2 Fuel Oil	1
2. Underground Tank	Steel	2 yrs.	3,000 gal.	#2 Fuel Oil	2
3. Surface Tank on Pad	Steel	10 yrs.	15,000 gal.	Polystyrene	3
4. Surface Tank on Pad	Steel	10 yrs.	15,000 gal.	Polypropylene	3
5. Underground Tank	Steel	15 yrs.	3,000 gal.	#2 Fuel Oil	4
6. Underground Tank	Steel	15 yrs.	3,000 gal.	Gasoline	5
7. Underground Tank	Steel	2 yrs.	1,000 gal.	Hydraulic Oil	5
8. Drums	Steel	1 yr.	55 gal.	Various (See Item 12)	6,7

* Location numbers are presented in Site Plan (Appendix I)

ATTACHMENT H-10

APPENDIX V

KNOWN SPILLS OR DISCHARGES

(ECRA FORM 2 - SECTION 13)

ATTACHMENT H-11

SECTION 13 - DESCRIPTION OF KNOWN SPILLS OR DISCHARGES

1. Approximately two years ago, water was detected in the 3000) gallon fuel oil tank located in area 4 indicating a potential leak. Upon excavating, holes were noticed on the top of the tank. However, no oil was observed in the surrounding soil. The old tank was removed and replaced with a new 3000 gallon steel tank.

2. Incidental spillage of raw materials occurs during the transfer of pellets from rail cars to storage tanks at location 3. The pellets are inert substances (polypropylene and polystyrene) which are not degradable under normal environmental conditions. A surficial cleanup is routinely performed as part of normal cleaning operations.

3. Soils along the tracks behind the plant (area 7-8) were observed to be stained with a black, oily resinous substance of unknown origin. It is suspected that the substance may have originated from the railcars. A surficial cleanup is planned to eliminate this condition.

4. No unauthorized or accidental discharges are known to have entered the environment during the known historical operations of the plant.

ATTACHMENT H-12

ATTACHMENT I

INTERNATIONAL TECHNOLOGY CORPORATION

GROUND WATER INVESTIGATION PLAN
LORAL PACKAGING FACILITY
GARWOOD, NEW JERSEY

Prepared for:

LORAL CORPORATION
600 Third Avenue
New York, New York 10022

Job No. 560008
December 1986

#86117

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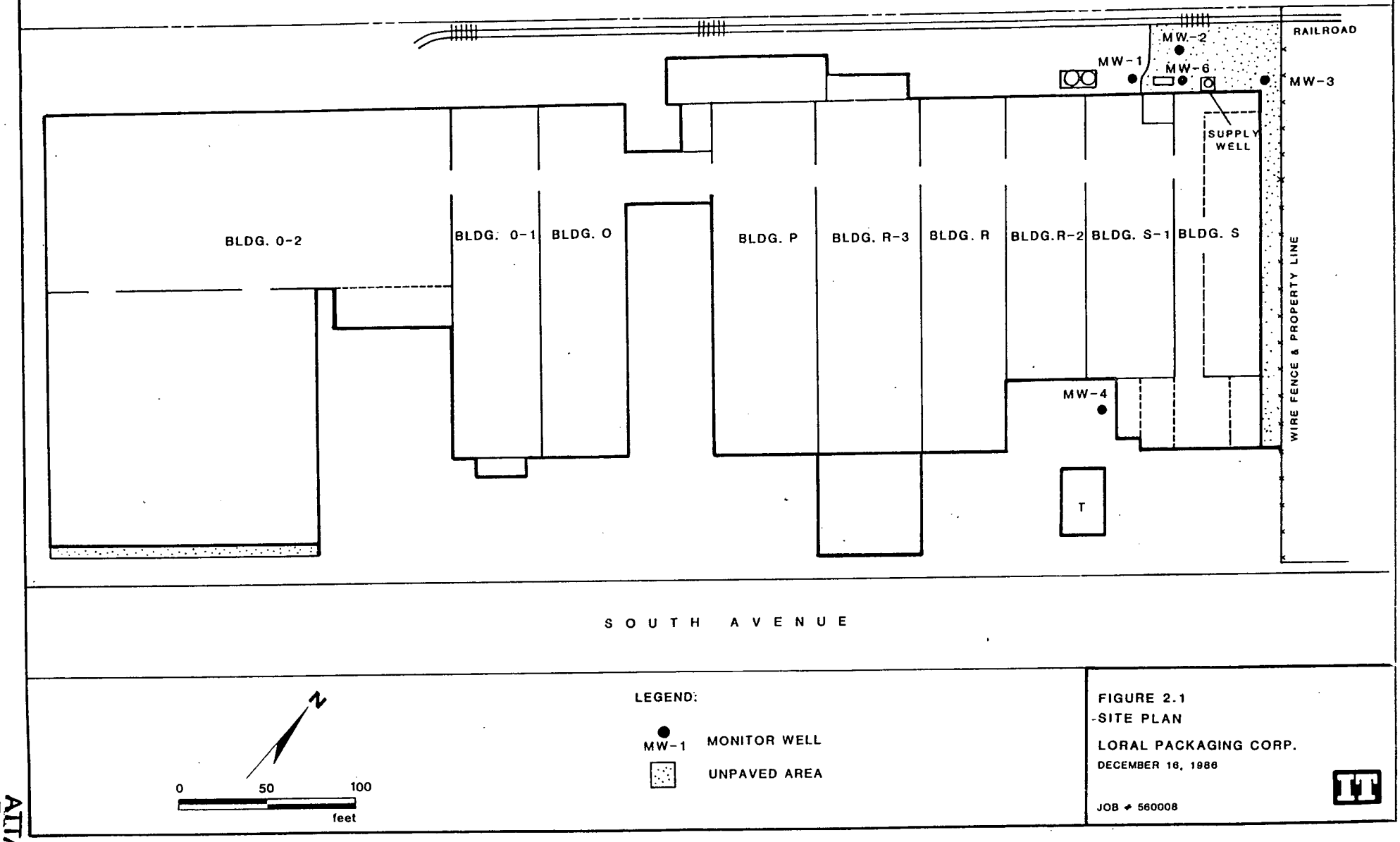

FIGURE 2.1
-SITE PLAN
LORAL PACKAGING CORP.
DECEMBER 16, 1986

JOB # 560008

IT

ATTACHMENT 1-3

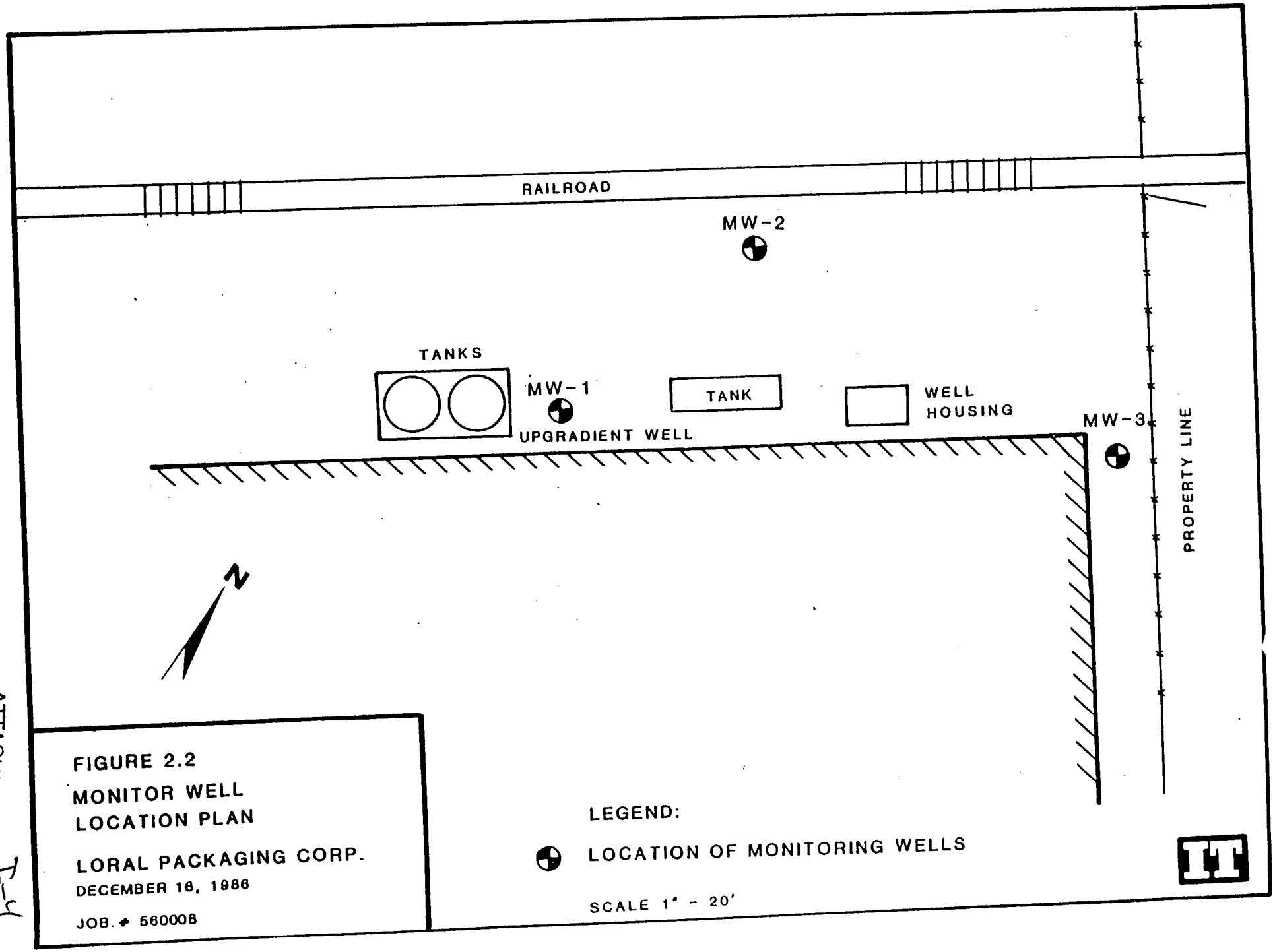

FIGURE 2.2
MONITOR WELL
LOCATION PLAN

LORAL PACKAGING CORP.
DECEMBER 16, 1986

JOB. # 560008

ATTACHMENT I
I-4

3.0 AREAS OF ENVIRONMENTAL CONCERN

The initial soil investigation study by URS at the Loral-Garwood site has indicated one area to be of environmental concern to the local ground water. This is an area near an underground fuel oil tank located in the northeastern corner of the property (Figure 3.1). The following is a brief discussion of this area and of previous soil sampling and analysis performed in the proximity of the tank.

3.1 PREVIOUS SAMPLING AND ANALYSIS

The initial soil investigation study for the Garwood site was completed in February 1986 by URS. Four soil borings were taken within five feet of the sides of the tank (Figure 3.2). Split spoon samples were taken at a depth of ten feet below the surface, and analysis on the soil samples indicated that the area was contaminated with petroleum hydrocarbons ranging from 200 to 1800 ppm. These soil samples were taken below the ground water table, and thus, the results may be subject to NJDEP objections as to their validity.

3.2 PREVIOUS REMEDIAL ACTIONS

The underground tank was removed by IT and approximately 300 cubic yards of contaminated soil were excavated in three stages. At one point during the soil excavation, Building S required shoring of its foundation because of its close proximity to the excavation. Before backfilling, IT installed a french drain at the bottom of the tank excavation and a six-inch diameter, slotted, well casing. This well does not meet NJPDES construction standards. This well will not be utilized during sampling, but will be used to take water level readings.

4.0 ENVIRONMENTAL SETTING

4.1 SITE LOCATION AND TOPOGRAPHY

Loral Packaging, Inc. facility is located at 520 South Avenue, Garwood, New Jersey (see Figure 1.1). The plant is located in a industrial commercial section of Garwood and consists of eight buildings. The plant is bordered by CNN railroad tracks to the north. The majority of the site is paved and the ground surface slopes gently to the south-southeast. Surface runoff is intercepted by the local sewer system.

4.2 SITE GEOLOGY

The site is covered with a fill of variable composition and thickness. The fill ranges in composition from a clean structural fill of bricks and gravel to a moderately plastic, silty clay which varies from one to eight feet in thickness. The underlying natural sediments consist of a sandy till with variable amounts of silt and clay. A gravel and sand pocket, which is thought to be a buried stream channel or deposit, was noted at a depth of seven to eight feet along the north and south faces of the tank excavation. Below this gravel deposit, the sandy till was again encountered.

Bedrock is estimated to be 12 to 16 feet below the surface based upon pile driving refusal depths. The bedrock at the site is the New Brunswick Shale. The shale generally weathers to a moderately plastic, silty clay with an associated low permeability. The weathered rock layer often acts as a clay cap on the unweathered bedrock, thus, retarding ground water flow between the rock and overburden.

4.3 SITE HYDROGEOLOGY

Current hydrogeologic information is limited and is based on water level readings taken at monitor well location number one (see Figure 2.1) and U.S.G.S. topographic maps. The information obtained during the water sampling

ATTACHMENT I-6

and analysis phase will help define the ground water flow patterns and graidents. The best estimated ground water flow direction is to the south-southeast towards a stream located two blocks south of the site. This flow direction also corresponds to the general slope of the site which is to the southeast. Water level readings taken at MW-1 indicate that the ground water table is encountered at a depth of 8.2 feet below the surface.

ATTACHMENT I-7

ATTACHMENT J

SAMPLING RESULTS
LORAL PACKAGING, INCORPORATED
520 SOUTH AVENUE
GARWOOD, NEW JERSEY
ECRA CASE NO. 86117

Prepared for

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September, 1988

Project No. 19-0109

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EXECUTIVE SUMMARY

ECRA site assessment activities performed at the Loral Packaging facility in Garwood, New Jersey, have included the collection of soil samples, installation of monitoring wells, collection of groundwater samples, dye testing of two pits, and the evaluation of sumps at the facility. Soil sampling identified two areas of the site with surficial petroleum hydrocarbon contamination. Further delineation sampling is proposed for the Drainage Ditch/Compressor Blowdown and Sump Discharge Area. After delineation, cleanup for this area and the Former Drum Storage Area which also had elevated levels of petroleum hydrocarbons in the shallow soils will be addressed.

Petroleum hydrocarbons were detected in the groundwater at levels slightly above ECRA guidelines. Volatile organic compounds which have not been used at the site were also identified in the groundwater. Since groundwater contours could not be determined due to a localized mounding effect, further investigation is proposed to determine the source of the petroleum hydrocarbons and volatile organics. The efforts will include a review of NJDEP well records and ECRA cases in the vicinity. A pump test of the on-site production well is also proposed to determine if the well is effecting groundwater flow.

Initial dye testing of the pits did not confirm the discharge point, however, an additional potential discharge location at the site was subsequently identified. The tests will be repeated while monitoring the additional potential discharge point.

Discharges to the drainage ditch from the four sumps at the site will be discontinued.

ATTACHMENT D-6

TECHNICAL OVERVIEW

Site assessment activities have been undertaken in response to the Environmental Cleanup Responsibility Act (ECRA) at the Loral Packaging facility in Garwood, New Jersey. The activities were performed in accordance with the Sampling Plan submitted in March 1987, the Report of Inspection dated December 21, 1987, the Sampling Plan Addendum submitted in April 1988, and the New Jersey Department of Environmental Protection (NJDEP) approval letter dated May 25, 1988. Activities included the following:

- Collection of soil samples from the Drainage Ditch/Compressor Blowdown and Sump Discharge Area
- Collection of soil samples from the Former Drum Storage Area
- Determination of the discharge location of the Collection Pit on the North Side of the Facility
- Determination of the discharge location of the Covered Pit Inside the Facility
- Tightness testing of the abandoned underground storage tank
- Evaluation of measures to ensure that no hazardous materials reach the drainage ditch on the east side of the facility via the compressor blowdown and sump pumps
- Installation of monitoring wells to assess the quality of the groundwater underlying the site.

FINDINGS

GENERAL

Seven areas requiring investigation were identified at the Loral Packaging facility in Garwood, New Jersey. These areas included the Drainage Ditch/Compressor Blowdown and Sump Discharge Area, Former Drum Storage Area, Collection Pit on the North Side of the Facility, Covered Pit Inside the facility, Abandoned Underground Storage Tank, Sump Pumps, and the Quality of the Groundwater Underlying the Site.

The site assessment activities to address these areas were performed in accordance with the procedures described in the Sampling Plan, Sampling Plan Addendum and NJDEP approval letter with the following exceptions:

- All soil samples at the 18 to 24-inch depth in the Former Drum Storage Area were analyzed for base/neutral compounds rather than limiting the analysis to twenty five percent of the samples. The additional sampling was performed to determine if the petroleum hydrocarbons identified at the 0 to 6-inch depth were confined to the surface soils.

- The location of monitoring well MW-4 was modified in the field due to the presence of an underground storm sewer system and the proximity to a heavily trafficked area.

- The depth of the screened interval on monitoring wells MW-3 and MW-4 were modified since refusal was encountered at a depth of 12 feet.

- Analysis of the soil samples collected during the monitoring well installation were limited to base/neutral compounds and petroleum hydrocarbons which are the compounds of concern in the area of the removed underground fuel oil tank. Volatile

organic compounds and pH were not measured. Soil samples were not analyzed for volatile organic compounds since no reported spills of volatile organic materials had occurred in this area and soil samples collected at the site revealed no detectable concentrations of volatile organic compounds.

Detailed descriptions of the activities performed for each area of concern including sample collection and analytical results are presented below.

DRAINAGE DITCH/COMPRESSOR BLOWDOWN AND SUMP DISCHARGE AREA

SAMPLE COLLECTION

On July 14, 1988, soil samples were collected at five locations in the Drainage Ditch/Compressor Blowdown and Sump Discharge Area located on the east side of the facility. Samples S-1 through S-5 were collected at a depth of 0 to 6 inches and submitted for petroleum hydrocarbon analysis. As requested in the Sampling Plan Approval letter, 25 per cent of the samples were analyzed for base/neutral compounds. Based on field observations, samples S-1 and S-5 were selected for analysis for base/neutral compounds.

ANALYTICAL RESULTS

Petroleum hydrocarbon concentrations were detected at levels ranging from 1,100 to 50,000 parts per million (ppm). The base/neutrals analyses revealed concentrations of targeted compounds in S-1 of 436.1 ppm and S-5 of 4.7 ppm. The non-targeted peaks in these samples were estimated at 102.1 ppm and 69.4 ppm, respectively. With the exception of 5 ppm of bis (2-ethylhexyl) phthalate, which is below the ECRA guideline of 10 ppm for base/neutral compounds in soil, the targeted base/neutral compounds identified in S-1 are typical components of asphalt. Based on the sample location and shallow depth, the base/neutral

compounds identified in S-1 are probably attributable to fragments of asphalt paving being collected with the soil sample. The targeted base/neutral compounds identified in S-5, 3.5 ppm of bis (2-ethylhexyl) phthalate and 1.2 ppm of pyrene, were below ECRA guidelines. The soil sampling results are summarized in Table 1 and illustrated on Figure 1. Analytical data including Tier II deliverables is provided in Appendix A.

FORMER DRUM STORAGE AREA

SAMPLE COLLECTION

Soil samples were collected from four locations, S-6 through S-9, in the vicinity of the Former Drum Storage Area. On July 14, 1988, soil samples were collected from locations S-6 through S-9 at depths of 0 to 6 inches and 18 to 24 inches and submitted for petroleum hydrocarbon and base/neutrals analyses, respectively. Originally, only one sample from 18 to 24 inches was to be analyzed for base/neutral compounds. However, based on field observations, samples from each of the locations were collected at the 18 to 24-inch depth for base/neutrals analysis to determine if the petroleum hydrocarbons suspected at the 0 to 6-inch depth had impacted the deeper soils.

In addition to the petroleum hydrocarbon and base/neutral analyses, samples were collected from each location at a depth of 18 to 24 inches for volatile organics analysis. A sample from S-7 was collected on July 14, 1988, and samples from S-6, 8 and 9 were collected on August 4, 1988. Field screening of these samples with an Organic Vapor Analyzer (OVA) revealed no detectable concentrations of organics.

ANALYTICAL RESULTS

Petroleum hydrocarbons were identified in the 0 to 6-inch depth samples at concentrations ranging from 1,700 to 25,000 ppm.

TABLE 1

SUMMARY OF ANALYTICAL RESULTS
DRAINAGE DITCH/COMPRESSOR BLOWDOWN AND SUMP DISCHARGE AREA
SOIL SAMPLING
JULY 14, 1988

SAMPLE LOCATION	ECRA GUIDELINES	S-1	S-2	S-3	S-4	S-5
SAMPLE DEPTH		0-6"	0-6"	0-6"	0-6"	0-6"
Base/Neutrals (ppm)	10					
Acenaphthene		17	--	--	--	u
Anthracene		9.2	--	--	--	u
Benzo(a)anthracene		45	--	--	--	u
Benzo(a)pyrene		48	--	--	--	u
Benzo(b)fluoranthene		34	--	--	--	u
Benzo(ghi)perylene		19	--	--	--	u
Benzo(k)fluoranthene		7.5	--	--	--	u
Bis (2-ethylhexyl) Phthalate		5	--	--	--	3.5
Chrysene		48	--	--	--	u
Dibenz(a,h)anthracene		5.2	--	--	--	u
1,2-Dichlorobenzene		0.71*	--	--	--	u
1,4-Dichlorobenzene		0.51*	--	--	--	u
Di-n-butyl Phthalate		0.41*	--	--	--	u
Fluoranthene		57	--	--	--	0.6*
Fluorene		11	--	--	--	u
Indeno(1,2,3-cd)pyrene		25	--	--	--	u
Napthalene		8.2	--	--	--	0.3*
Phenanthrene		39	--	--	--	0.36*
Pyrene		58	--	--	--	1.2
Non-Targeted Peaks		102.1*	--	--	--	69.4*
Petroleum Hydrocarbons (ppm)	case-by-case	21,000	3,800	1,100	9,100	50,000

-- = not analyzed
* = estimated concentration

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The concentrations of targeted base/neutral compounds at 18 to 24 inches ranged from undetected to 0.28 ppm. The estimated levels of non-targeted base/neutral peaks varied from 4.4 to 9.1 ppm. The total concentrations of base/neutral compounds at all sampling locations were below the ECRA guideline level of 10 ppm for soils.

Targeted volatile organic compounds at all sampling locations were undetected with the exception of very low levels, 0.006 to 0.015 ppm, of methylene chloride and 0.004 ppm of toluene, which were also identified in the laboratory blank. Estimated concentrations of non-targeted volatile organic peaks ranged from 0.021 to 0.044 ppm. The total concentration of volatile organic compounds at each sampling location was well below the ECRA guideline of 1 ppm for soils. These laboratory findings confirm the OVA readings during sample collection.

The soil sampling results are summarized in Table 2 and illustrated on Figure 1. Analytical data including Tier II deliverables is provided in Appendix A.

COLLECTION PIT ON THE NORTH SIDE OF THE FACILITY

On August 1, 1988, the storm water collection pit on the north side of the facility was dye tested to determine its discharge location. Plant personnel identified the sewer junction chamber which was believed to service the facility and the storm water collection pit. Monitoring of the junction chamber during the injection of dye in the collection pit was inconclusive and did not confirm that the collection pit discharged to the storm sewer. A subsequent survey and investigation of the sewer system in the vicinity of the facility has revealed another junction chamber which appears to receive storm water from the site. Therefore, another dye test of the collection pit will be performed with both junction chambers monitored.

ATTACHMENT 5-6

ATTACHMENT 3-17

TABLE 2

SUMMARY OF ANALYTICAL RESULTS
FORMER DRUM STORAGE AREA
SOIL SAMPLING
JULY 14, 1988 TO AUGUST 4, 1988

SAMPLE LOCATION	ECRA GUIDELINES	S-6		S-7		S-8		S-9		DUP (S-7)		DUP (S-9)		FIELD BLANK	FIELD BLANK	TRIP BLANK	TRIP BLANK
SAMPLE DEPTH		0-6"	18-24"	0-6"	18-24"	0-6"	18-24"	0-6"	18-24"	0-6"	18-24"	0-6"	18-24"				
Volatile Organics (ppm)	1																
Methylene Chloride		--	u	--	0.013B	--	u	--	0.015B	--	0.006B	--	0.012B	u	u	u	u
Toluene		--	u	--	0.004B	--	u	--	u	--	0.004*B	--	u	u	u	u	u
Non-Targeted Peaks		--	0.044*	--	u	--	0.021*	--	0.006*B	--	u	--	0.028*	u	u	u	u
Base/Neutrals (ppm)	10																
Chrysene		--	0.28	--	u	--	u	--	u	--	u	--	--	u	--	u	--
Fluoranthene		--	0.17*	--	u	--	u	--	u	--	u	--	--	u	--	u	--
Non-Targeted Peaks		--	4.4*	--	9.1*	--	8.22*	--	0.27*B	--	0.8*B	--	--	0.049*B	--	0.037*	--
Petroleum Hydrocarbons (ppm)	case-by-case	3,500	--	1,700	--	25,000	--	2,300	--	2,100	--	--	--	u	--	u	--

-- = not analyzed
* = estimated concentration
B = Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

COVERED PIT INSIDE THE FACILITY

The drainage pipe in the covered pit located inside the facility was dye tested on August 1, 1988, to confirm that it discharged to the municipal storm sewer system. Monitoring of the junction chamber, which plant personnel had identified as servicing the facility, was inconclusive. A subsequent analysis of the sewer system in the vicinity of the site has identified another junction chamber which appears to receive storm water from the facility. Based on this finding, another dye test of the drainage pipe will be performed while monitoring both junction chambers.

ABANDONED UNDERGROUND STORAGE TANK

On July 14, 1988, the abandoned underground storage tank located in Building S-1 adjacent to the boiler room was inspected. The capacity of the tank is 3,000 gallons. It is believed that the tank was previously used to store fuel oil for the facility's boiler. Approximately 10 inches of residual liquid was identified in the tank. The liquid was sampled and submitted for laboratory analysis for volatile organic compounds using a non-compliance gas chromatograph screen. The laboratory analysis revealed approximately 13.6% toluene and 0.01% total xylenes.

On August 29, 1988, the integrity of the tank was determined using the Petro-Tite tank test method which conforms to Criterion 329 of the National Fire Protection Association (NFPA). Prior to testing the tanks, the residual liquid contents were pumped into 55-gallon drums and the tank was power washed and cleaned. The Petro-Tite test was performed using water. The results of the precision test are summarized below:

TANK ID	PRODUCT	CAPACITY	NET VOLUME CHANGE	CRITERIA
Abandoned Tank in Bldg. S-1	Water	3,000 gal.	1.318 gph	$\leq \pm$ 0.05 gph

The results indicate that the tank system did not meet the NFPA's accepted criteria for critical tank tightness (NFPA Bulletin #329, Page 30, "Final Test") as having a net system change not exceeding 0.05 gallons in one hour. Complete tank testing results are provided in Appendix B.

EVALUATION OF SUMPS

To evaluate the potential for contaminants to be discharged by the sump pumps to the drainage ditch on the east side of the facility, four sumps at the Loral Packaging facility were examined. The sumps are located in the northwest corner of Building S-1, the northeast corner of Building S, the boiler room in Building S-1, and the boiler room in Building R-2. The approximate locations are illustrated in Figure 1.

The four sumps were originally installed at the facility to collect water that might enter the building during periods of rainfall. Water entering the building is no longer a concern; therefore, the sump in Building S-1 is rarely, if ever, used.

The sump in Building S is used on a continuous basis to collect condensed water vapor from the air receiver which is installed on the compressed air system. The condensed water vapor is presently pumped through an activated carbon filter and discharged on the east side of the building.

The sumps in the boiler rooms are only used on an intermittent basis to collect city water when the make-up feed water control valves on the boilers are tested. These valves are normally

tested on a weekly basis and a few gallons of water are allowed to bleed from the city water supply line into the sumps. The discharges from the sumps are currently piped to the east side of the facility.

GROUNDWATER MONITORING

WELL INSTALLATIONS

A 3,000-gallon steel underground storage tank used to store fuel oil was formerly located on the north side of the facility. In 1986, the tank was removed and replaced by a 3,000-gallon fiber glass tank which is currently on-site. During the tank replacement, contaminated soil was excavated from around the tank and a french drain was installed at the bottom of the excavation.

To determine groundwater quality in the vicinity of the removed tank, four monitoring wells were installed in July 1988, at the locations shown on Figure 2. Monitoring wells MW-1 through MW-3 were installed on three sides of the former tank location. Monitoring well MW-4 was located to the southwest of the tank location on the opposite side of the building. This location varied from the location selected by the NJDEP for monitoring well, MW-4, in their letter dated May 25, 1988. The location was modified in the field due to the presence of an underground storm sewer system and proximity to a heavily trafficked loading dock.

A detailed description of well installation procedures are provided in Appendix C. Deviations from the proposed monitoring well design (i.e., modification of the depth of the screened interval) were necessary on wells MW-3 and MW-4 since cobbles and boulders were discovered at depths of 9 to 10 feet and refusal was encountered at a depth of 12 feet. Initial attempts to drill MW-1 and MW-3 were abandoned when obstructions were encountered.

ATTACHMENT D-6

Scrap steel and a boulder were encountered at MW-1 and MW-3, respectively. Drilling was terminated at each location and reinitiated at an immediately adjacent location. The abandoned borings were grouted. Boring logs and monitoring well as-builts are shown in Appendix D.

SAMPLE COLLECTION

To characterize site stratigraphy, soil samples were collected continuously during the installation of monitoring well MW-3. At all well locations, soil samples were collected from 0 to 6 inches above groundwater and submitted to an NJDEP certified laboratory to be analyzed for base/neutral compounds and petroleum hydrocarbons. Since no volatile organic compounds were detected in any of the soil samples collected at the site and no releases or spills of volatile organics are reported to have occurred at the site, samples were not analyzed for volatile organics. Details of the soil sampling protocol are given in Appendix C.

On August 1, 1988, groundwater samples were collected from MW-1 through MW-4 and the on-site production well for analysis for volatile organic compounds, base/neutral compounds, petroleum hydrocarbons, total dissolved solids, and pH. The Quality Assurance/Quality Control Procedures followed for the sampling procedures are provided in Appendix C.

GROUNDWATER FLOW DIRECTION

Static water levels were measured at each well location on August 1 and August 22, 1988. The groundwater elevation data is summarized in Table 3 and illustrated on Figures 3 and 4.

ATTACHMENT D-17

TABLE 3

WATER TABLE ELEVATION DATA

WELL NO.	ELEVATION REFERENCE (FT)(1)	WATER TABLE ELEVATION (FT)	
		8/1/88	8/22/88
MW-1	93.27	84.42	86.79
MW-2	92.70	84.45	83.64
MW-3	92.80	90.55	90.30
MW-4	89.98	82.23	81.39

(1) Reference point is north side of top of PVC well casing; elevations are reported relative to mean sea level.

ATTACHMENT 5-18

Anomalies in the groundwater elevations preclude the construction of groundwater contours in the vicinity of the former fuel oil tank location. On both dates there appears to be mounding of the groundwater in the vicinity of MW-1 and MW-3. Some possible reasons for this condition are the french drain which was installed during the tank excavation, the presence of backfill is different permeability characteristics, the building foundation, and/or the on-site production well. The french drain, backfill materials, and the production well are located between MW-1, MW-2, and MW-3. The building foundation separates MW-4 from the other monitoring wells.

ANALYTICAL RESULTS

Soil Samples

The results of laboratory analysis of soil samples collected from 6 inches above groundwater during installation of wells MW-1 through MW-4 are summarized in Table 4 and illustrated on Figure 1. Concentrations of total base/neutral compounds in all four monitoring well locations were below the ECRA guideline level of 10 ppm. Targeted base/neutral compounds were undetected in all samples and total non-targeted compounds were undetected in wells MW-1 and MW-3. Estimated concentrations of non-targeted peaks in MW-2 and MW-4 were 0.4 and 0.3 ppm, respectively. Petroleum hydrocarbons were undetected in all four samples. Complete analytical results including Tier II deliverables are provided in Appendix A.

Groundwater Samples

Analytical results of groundwater sampling are summarized in Table 5 and illustrated on Figure 2. Concentrations of total volatile organic compounds ranged from undetected in MW-1 to 116 ppb in MW-2. Trans 1,2 dichloroethylene was detected in wells

ATTACHMENT D-19

TABLE 4

SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING DURING MONITORING WELL INSTALLATIONS
JULY 19, 1988

SAMPLE LOCATION	ECRA GUIDELINES	MW-1	MW-2	MW-3	MW-4	DUP (MW-1)	FIELD BLANK	TRIP BLANK
SAMPLE DEPTH		0-6" Above GW	0-6" Above GW	0-6" Above GW	0-6" Above GW	0-6" Above GW		
Base/Neutrals (ppm)	10							
Targeted Compounds		u	u	u	u	u	u	u
Non-Targeted Peaks		u	0.4*	u	0.3*	u	0.016*	0.041*
Petroleum Hydrocarbons (ppm)	Case-by-Case	u	u	u	u	u	u	u

GW = Groundwater
u = undetected
* = Estimated concentration

213:977

ATTACHMENT J-20

TABLE 5

SUMMARY OF ANALYTICAL RESULTS
GROUNDWATER MONITORING
AUGUST 1, 1988

SAMPLE LOCATION	ECRA GUIDELINES	MW-1	MW-2	MW-3	MW-4	ON-SITE PRODUCTION WELL	DUP (MW-2)	FIELD BLANK	TRIP BLANK
Total Volatile Organics (ppb)[1]	10	u	116	33	u	32	111	u	u
Methylene Chloride		u	u	u	u	u	u*	3B*	7B
Vinyl Chloride		u	u	u	u	u	5	u	u
t-1,2-Dichloroethylene		u	84	21	u	u	81	u	u
Trichloroethylene (TCE)		u	32	u	u	u	30	u	u
Tetrachloroethylene (PCE)		u*	u	12*	u	32*	u*	u	u
Toluene		2B*	u	2B*	u*	2B*	2B*	u	u
Non-Targeted Peaks (total)		u	u	u	7*	u	u	u	u
Total Base/Neutrals (ppb)[1]	50	23	u	u	u	u	u	u	u
Acenaphthene		4*	u	u	u	u	u	u	u
Fluorene		4*	u	u	u	u	u	u	u
Naphthalene		23*	u	u	u	u	u	u	u
Phenanthene		3*	u	u	u	u	u	u	u
Non-Targeted Peaks (total)		232*	u	u	u	u	u	u	u
Petroleum Hydrocarbons (ppm)	1	u	1.7	0.81	1.3	u	2.4	u	u
pH		6.51	6.20	7.06	7.40	7.06	6.27	5.89	6.23
TDS		393	437	373	410	270	413	67	u

u = Undetected
* = Estimated concentration
1 = Total does not include estimated values
B = Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

213:977

ATTACHMENT D-21

MW-2 and MW-3 at levels of 84 ppb and 21 ppb, respectively. Trichloroethylene (TCE) at 32 ppb in MW-2 and tetrachloroethylene (PCE) at 12 ppb in MW-3 and 32 ppb in the on-site production well were also detected. Vinyl chloride estimated at 5 ppb, which was below the detection limit, was detected in the duplicate of MW-2. The only volatile organic compound detected in MW-4 was tentatively identified as acetone at an estimated 7 ppb. This is believed to be a result of the laboratory decontamination of the bailers.

Petroleum hydrocarbon concentrations ranged from undetected in MW-1 and the on-site production well to 1.7 ppm in MW-2. Levels of 0.81 ppm and 1.3 ppm were detected in monitoring wells MW-3 and MW-4, respectively.

Base/neutral compounds were undetected in all wells except MW-1. Targeted compounds were detected in MW-1 at levels below ECRA guidelines. Napthalene was detected at 23 ppb. All other compounds were undetected or below the minimum detection level. An estimated value of 232 ppb was detected in the non-targeted peaks. Complete analytical results including Tier II deliverables are provided in Appendix C.

ATTACHMENT J-22

CONCLUSIONS AND RECOMMENDATIONS

DRAINAGE DITCH/COMPRESSOR BLOWDOWN AND SUMP DISCHARGE AREA

The sampling results for this area indicate petroleum hydrocarbon contamination in the surface soils at depths of 0 to 6 inches. Base/neutral compounds detected in this area are not of environmental concern since the only base neutrals detected above ECRA guidelines are believed to result from fragments of asphalt paving collected in the soil.

The horizontal extent of the petroleum hydrocarbon contamination is confined to the narrow, un-paved strip of property on the east side of the facility. The vertical extent of the contamination cannot be determined from the surficial sampling that was performed in this area. To identify the vertical extent of contamination, soil samples will be collected at greater depths and analyzed for petroleum hydrocarbons. The samples will be collected at locations S-1 through S-5 as in the previous sampling activities. The depths of the soil samples will be determined in the field by using an Organic Vapor Analyzer (OVA) to screen the soils. At the depths when no petroleum hydrocarbons are detected by the OVA, a confirmation sample will be collected and submitted for laboratory analyses.

MEDIA TO BE SAMPLED

Soil samples will be collected.

SAMPLING FREQUENCY AND LOCATIONS

Five soil samples will be collected at locations S-1 through S-5 as in the previous sampling activities. These locations are illustrated on Figure 1.

ATTACHMENT 5-23

SAMPLING DEPTHS

Sampling depths for each location will be determined in the field by screening the soils with an OVA. At the depths when no petroleum hydrocarbons are detected by the OVA, soil samples will be collected and submitted for laboratory analysis.

ANALYTICAL PARAMETERS

The delineation soil samples will be analyzed for petroleum hydrocarbons. Twenty five percent of the samples will be analyzed for base/neutral compounds.

SOIL SUMMARY

A summary of the proposed sampling activities is provided in Table 6.

SOIL REMEDIATION

The analytical results of the soil investigation will be used to determine the extent of the soil contamination in this area. If contamination is limited to the first two feet, soil excavation and removal will be performed. If contamination is more extensive, a cleanup plan will be developed.

FORMER DRUM STORAGE AREA

The results of the soil sampling in the Former Drum Storage Area identified petroleum hydrocarbon contamination in the surface soils at depths from 0 to 6 inches. It is suspected that the petroleum hydrocarbons resulted from the stock piling of excavated soils during the previous removal of the underground fuel oil storage tank. Sampling at depths of 18 to 24 inches for base/neutrals and volatile organic compounds confirm that the contamination is limited to the surface soils.

ATTACHMENT 5-24

TABLE 6

SAMPLING SUMMARY

LOCATION	MATRIX	SAMPLE DEPTH	ANALYTICAL PARAMETERS
DRAINAGE DITCH/COMPRESSOR BLOWDOWN AND SUMP DISCHARGE AREA			
S-1	Soil	Depth determined in field	Petroleum Hydrocarbons Base/Neutral Compounds
S-2	Soil	Depth determined in field	Petroleum Hydrocarbons
S-3	Soil	Depth determined in field	Petroleum Hydrocarbons
S-4	Soil	Depth determined in field	Petroleum Hydrocarbons
S-5	Soil	Depth determined in field	Petroleum Hydrocarbons Base/Neutral Compuonds

ATTACHMENT J-25

No further sampling is proposed for the Former Drum Storage Area. Remediation of the soils in this area will be addressed after completion of the proposed delineation soil sampling in the Drainage Ditch/Compressor Blowdown and Sump Discharge Area.

COLLECTION PIT ON THE NORTH SIDE OF THE FACILITY

Since further review of the sewer system along South Avenue has revealed the existence of an additional junction chamber that appears to receive wastewater flows from the facility, the collection pit will be re-tested with dye and both junction chambers on South Avenue will be monitored. The dye testing will be performed in conjunction with the delineation soil sampling that is proposed for the Drainage Ditch/Compressor Blowdown and Sump Discharge Area.

COVERED PIT INSIDE THE FACILITY

In conjunction with the re-test of the collection pit, the drainage pipe in the covered pit located inside the facility will also be re-tested with dye to determine if it discharges to the additional junction chamber identified during the recent review of the sewer system on South Avenue.

ABANDONED UNDERGROUND STORAGE TANK

The results of the precision test indicate that the underground storage tank is not tight. The tank is located under a concrete slab floor in Building S-1 and is adjacent to active processing equipment. Given these constraints, removing the tank is impractical. Rather than removal, the tank will be abandoned in place by removing all liquids and filling the tank with a solid, inert material such as a cement-bentonite grout.

ATTACHMENT D-26

The need for further assessment activities in this area will be evaluated after completion of the activities proposed in the Groundwater Monitoring Section of this report.

EVALUATION OF SUMPS

Based on a review of the sump operations at the facility, only the sump which receives the condensed water vapor from the compressed air system is required for plant operations. The sump in Building S-1 is rarely used and not required for plant operations. The sumps in the boiler room are only used on an intermittent basis to collect small quantities of water during the testing of the make-up water control valves on the boilers. Discharge of water from the sumps to the drainage ditch on the north side of the facility will be discontinued.

GROUNDWATER MONITORING

Groundwater monitoring in the area of the underground fuel oil storage tank indicates concentrations of TCE, PCE, and trans 1,2-dichloroethylene above ECRA guidelines. Petroleum hydrocarbons were also detected at levels slightly above ECRA guidelines. The source of the volatile organic contaminants in the groundwater is believed to be an off-site source because these compounds were not detected in the soil samples collected at the site. In addition, these materials are not used in the facility's operations and according to plant personnel, have not been used in the past.

Groundwater flow patterns at the site cannot be determined from the available static water level data. The proximity of the building to the monitoring wells and the on-site production well may be influencing the water levels observed. The production well may be creating a cone of depression in the underground fuel oil tank area. It is conceivable that a cone of depression created by the production well could cause off-site contamination

to migrate toward the production well. This argument is strengthened by the lack of contamination in MW-1 and the presence of contamination in the two monitoring wells (MW-2 and MW-3) closest to the property boundary. Additional information is required before a sound conclusion regarding the source of contaminants in MW-2 and MW-3 can be reached.

A well record search is proposed to identify well installation details of the production well to determine if it is hydraulically connected to the same water-bearing zone as the monitoring wells. A short pumping test will be conducted using the production well and monitoring wells MW-1, MW-2, and MW-3 to determine if the production well is influencing the monitoring wells. A groundwater contour map will then be constructed using water level measurements from the production well and the monitoring wells.

In addition to the well record search, a review of the on-going ECRA cases in the Garwood area will be performed. The review will concentrate on groundwater quality and floor patterns in the area since it is believed that the volatile organic contaminants identified in the groundwater at the Loral facility are emanating from an off-site source.

ATTACHMENT 5-28

Client Loral Packaging, Inc. Project No. 19-0109 Permit No. 2613562

Site 520 South Avenue, Garwood, NJ Sheet 1 of 1

Date Started 7/22/88 Date Completed 7/22/88

Elevation 93.27 (TC) _____ (GS)

Hole Diameter 12 in. Boring Method HSA Development Method J

Elev. (ft.)	Depth (ft.)	Description	Strata Column	Sample	Moisture Content	Blows on Sampler 0"-6"	6"-12"	12"-18"	24"-18"	Sample No.	Recovery	Instrument Reading	Water Level (Date)
	0	Black sandy fill with no apparent odors by 1.5 to 2' - grades to grey black clay by 2' - grads to yellow-grey by 4' Red sandy silt w/some SS frags. by 5.5' - grades to silty clay by 7' - increase in gravel and cobbbles by 9' - very hard by 10' - Organic odors @ 12'		X	M	6	8	7	9	1	80%		8/1/88
	17.0	TOTAL DEPTH = 17.0 ft.											

FLUSH MOUNT ROAD BOX
LOCKING CAP
CEMENT BENT GROUT
BENT PELLET SEAL
4 PVC RISER
GRAVEL PACK #1
4" PVC SCREEN 10 SLOT
SCREW ON PVC PLUG

Sampler Type
- Driven Split Spoon
- Pressed Shelby Tube
- Rock Core
- No Recovery

Development Method
- AL – Air Lift
- P – Pumping
- J – Jetting
- SB – Surge Block

Boring Method
- HSA – Hollow Stem Auger
- CFA – Continuous Flight Auger
- DC – Driving Casing
- MD – Mud Drilling

ATTACHMENT J-29

DRILLING LOG

Boring No. MW2

Client Loral Packaging, Inc. Project No. 19-0109 Permit No. 2613563

Site 520 South Avenue, Garwood, NJ Sheet 1 of 1

Date Started 7/25/88 Date Completed 7/25/88

Elevation 92.70 (TC) _____ (GS)

Hole Diameter 12 in. Boring Method HSA Development Method J

Elev. (ft.)	Depth (ft.)	Description	Strata Column	Sample	Moisture Content	Blows on Sampler 0"-6"	6"-12"	12"-18"	24"-18"	Sample No.	Recovery	Instrument Reading	Water Level (Date)
	0	Dk. grey clay											
	5	- changes to yellow-brown - saturated - changes to red-brown by 8.5-9' - cobbles by 10'-dk. grey			W	3	4	5	4	1	30%		8/1/88
	15	TOTAL DEPTH = 15.0 ft.											
	20												
	25												
	30												
	35												

FLUSH MOUNT ROAD BOX
LOCKING CAP
CEMENT BENT GROUT
BENT PELLET SEAL
4" PVC RISER
GRAVEL PACK #1
4" PVC SCREEN 10 SLOT
SCREW ON PVC PLUG

Sampler Type
- Driven Split Spoon
- Pressed Shelby Tube
- Rock Core
- No Recovery

Development Method
- AL – Air Lift
- P – Pumping
- J – Jetting
- SB – Surge Block

Boring Method
- HSA – Hollow Stem Auger
- CFA – Continuous Flight Auger
- DC – Driving Casing
- MD – Mud Drilling

J-30

ATTACHMENT

DRILLING LOG

Boring No. MW-5

Client Loral Packaging, Inc. Project No. 19-0109 Permit No. 2613564

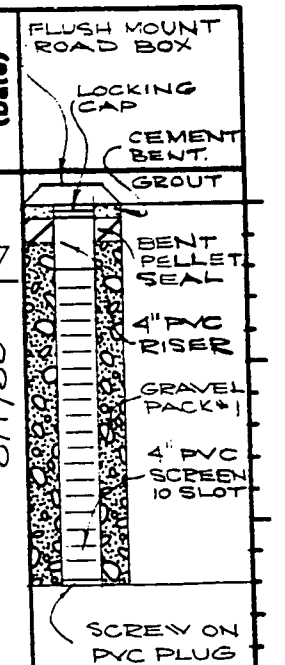
Site 520 South Avenue, Garwood, NJ Sheet 1 of 1

Date Started 7/21/88 Date Completed 7/22/88

Elevation 92.80 (TC) _____ (GS)

Hole Diameter 12 in. Boring Method HSA Development Method J

Elev. (ft.)	Depth (ft.)	Description	Strata Column	Sample	Moisture Content	Blows on Sampler 0"-6"	6"-12"	12"-18"	24"-18"	Sample No.	Recovery	Instrument Reading	Water Level (Date)
	0	Dk. grey clay		S		1	2	1	2	1	75%		
		Red-brown sandy clay				2	5	8	16	2	75%		
	5					7	10	10	10	3	50%		
						8	12	10	18	4	80%		8/1/88
	10	Red interbedded clay & partially lithified SS cobbles & boulders by 9'				-	-	-	-	5	-		
		TOTAL DEPTH = 12.0 ft.											
	15												
	20												
	25												
	30												
	35												



Sampler Type
- Driven Split Spoon
- Pressed Shelby Tube
- Rock Core
- No Recovery

Development Method
- AL – Air Lift
- P – Pumping
- J – Jetting
- SB – Surge Block

Boring Method
- HSA – Hollow Stem Auger
- CFA – Continuous Flight Auger
- DC – Driving Casing
- MD – Mud Drilling

ATTACHMENT D-31

Client Loral Packaging, Inc. Project No. 19-0109 Permit No. 2613565

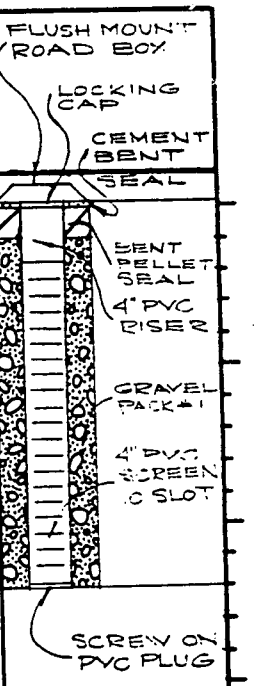
Site 520 South Avenue, Garwood, NJ Sheet 1 of 1

Date Started 7/20/88 Date Completed 7/20/88

Elevation 89.98 (TC) _____ (GS)

Hole Diameter 8 in. Boring Method HSA Development Method J

Elev. (ft.)	Depth (ft.)	Description	Strata Column	Sample	Moisture Content	Blows on Sampler 0"-6"	6"-12"	12"-18"	24"-18"	Sample No.	Recovery	Instrument Reading	Water Level (Date)
	0	Dk. grey clay - yellow/grey by 2.5' - red/brown by 3.5' - decrease in moisture content by 4.5' - gravel layer from 5 to 6'											
	5	Red-brown sandy clay w/some gravel - large cobbles by 9'		X	W	6	9	13	16	1	60%		8/1/88
	10	TOTAL DEPTH = 12.0 ft.											
	15												
	20												
	25												
	30												
	35												

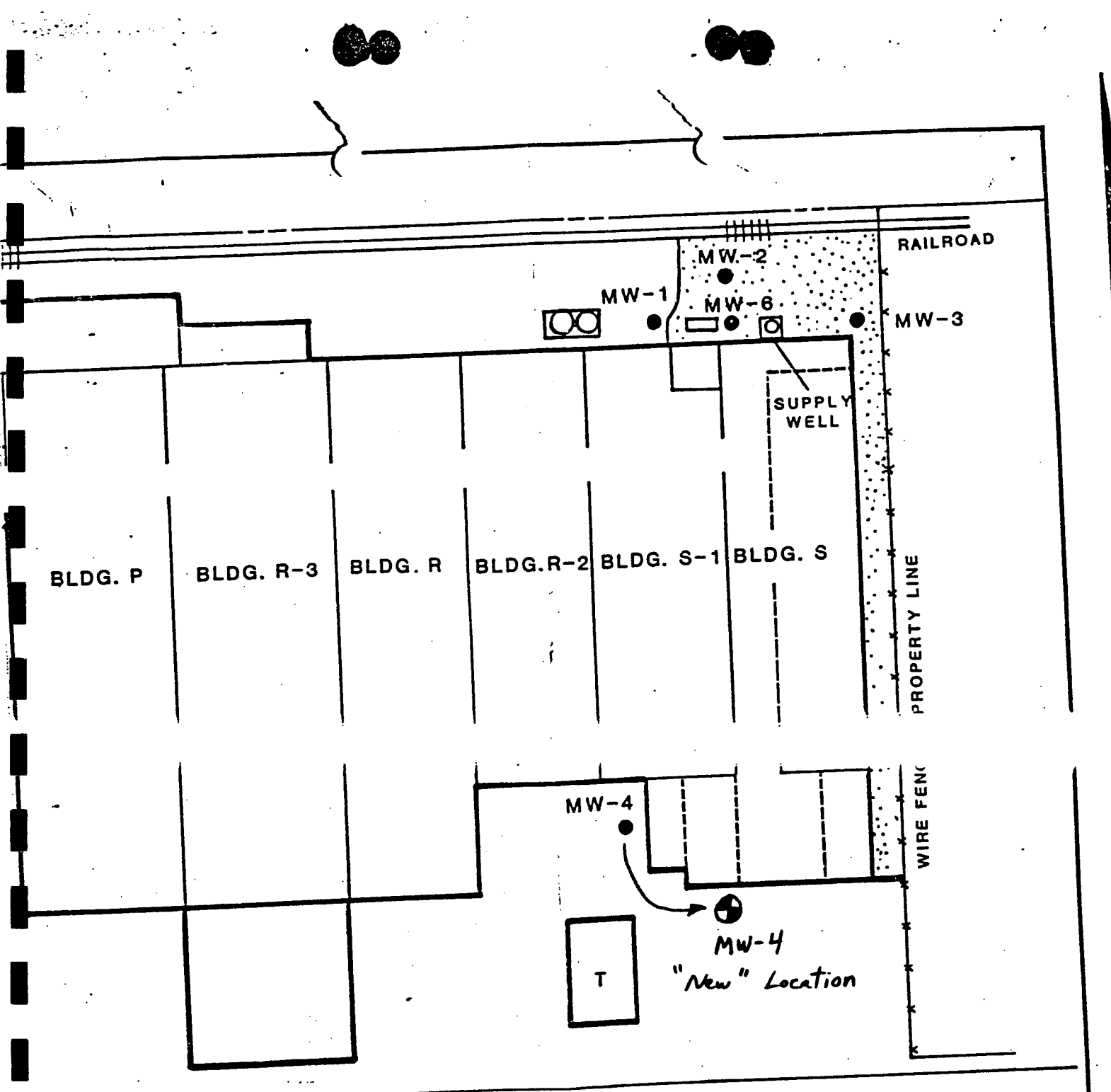


Sampler Type
- Driven Split Spoon
- Pressed Shelby Tube
- Rock Core
- No Recovery

Development Method
- AL – Air Lift
- P – Pumping
- J – Jetting
- SB – Surge Block

Boring Method
- HSA – Hollow Stem Auger
- CFA – Continuous Flight Auger
- DC – Driving Casing
- MD – Mud Drilling

ATTACHMENT 2-32



MONITOR WELL

UNPAVED AREA

FIGURE 2.1
-SITE PLAN

ATTACHMENT D-33

LORAL PACKAGING CORP.

DECEMBER 16, 1986

JOB # 560008

ATTACHMENT K

FIRST ENVIRONMENT

90 Riverdale Road
Riverdale, New Jersey 07457
(201) 616-9700 • FAX (201) 616-1930

MAY 21 8 52 AM '90

Telecopy

May 16, 1990

Mr. Michael Buriani
New Jersey Department of Environmental Protection
Bureau of Environmental Evaluation and
Cleanup Responsibility Assessment
401 East State Street
5th Floor
Trenton, New Jersey 08625

Re: Loral Packaging, Inc.
520 South Avenue
Garwood, New Jersey
ECRA Case No. 86117

Dear Mr. Buriani:

As we discussed in our telephone conversation on May 7, 1990, the installation of the monitoring well within Building R-3 at the above-referenced facility is scheduled for Saturday, May 19, 1990. Due to the location of the proposed monitoring well and the manufacturing processes conducted in that area, the well must be installed on a weekend or during a facility shutdown. March 19, 1990, was the first available date for the well installation activities. The proposed monitoring well, MW-5, will have to be a 2-inch diameter monitoring well because of the physical constraints within the building which require the use of a skid-mounted drill rig. The well will be installed adjacent to the covered pit and the 3,000-gallon underground fuel oil storage tank located inside Building R-3.

Based on the completion of the well installation on Saturday, we have scheduled the sampling of the well for June 4, 1990. Allowing approximately six weeks laboratory turnaround time and four weeks to prepare a report of results and review the report with legal counsel and the client, we anticipate submitting the results to the NJDEP by August 13, 1990. Therefore, we are requesting a 60-day extension for installing and sampling the well and submitting the results to the NJDEP.

With regard to the soil removal activities, the physical constraints of the facility prohibit the stockpiling of excavated soils at the rear of the site without significantly affecting plant operations. Therefore, we are planning on excavating the

f:3491/LOR005

ATTACHMENT K-1

soils and simultaneously transporting the soils to the disposal facility. Since landfill approval must be obtained prior to transporting the soils off-site, waste classification samples have been collected and submitted for laboratory analyses. Waste profile sheets will be prepared and submitted to the disposal facility when the analytical data is available. After receiving landfill approval, the soils will be removed and post excavation samples collected. We are presently preparing a schedule of these tasks and will forward it to you when available.

We will continue to keep you informed of the on-going investigation and cleanup activities. Should you have any questions, please do not hesitate to call.

Very truly yours,

FIRST ENVIRONMENT, INC.

Stuart Spady

Stuart Spady
Environmental Specialist

SS/jp

cc: B. Bernstein, Esq.
L. Brunt, P.E.

f:3491/LOR005

FIRST ENVIRONMENT

ATTACHMENT K-2

ATTACHMENT L

MEMO
TO: FILE
FROM: ANDREW CYR NJDEPE/DRPSR/BSA
SUBJECT: LORAL PACKAGING

ON DECEMBER 19,1991 I SPOKE WITH MICHAEL BURIANI OF THE NJDEPE/DRPSR BEECRA ABOUT THE STATUS OF ECRA CASE # 86117- LORAL PACKAGING, GARWOOD BOROUGH. MR. BURIANI STATED THAT THE CASE INVOLVED THE EXCAVATION OF TWO USTS AND THE ABANDONMENT OF FOUR OTHERS. FIVE MWS WERE INSTALLED. THE CASE WAS CLOSED ON SEPTEMBER 10, 1991.

ATTACHMENT L

ATTACHMENT M

MEMO
TO: FILE
FROM: ANDREW CYR HSMS NJDEP/DHWM/BPA
SUJECT: MAGNUS CHEMICAL P.S.A. 2/09/90

Donna Restivo and I of the NJDEP/DHWM/BPA arrive on site at 0914 hours. The weather is sunny and warm, temp is approx. 50 degrees F. We meet with Mr. Piscitelli of ACP Trust, owners of the property, and Mr. Greenberg of Environmental Waste Management Associates.

The site is a series of buildings leased to 15 different tenants. The site is entirely paved. Mr. Greenberg proceeded to show us the location of the five remaining USTs. He stated that samples from the tanks were collected last week and that the tanks will be removed in about a month. The area where Magnus had an above ground tank farm is now a building occupied by ICF, an enviromental contractorand is used for storage of equipment. The area behind this building was paved approx. five years ago. Readings from holes looked into packed gravel along the RR tracks were 500ppm as methane on an Organic Vapor Analizer. No drums were observed on site. The site is not fenced allowing access from the RR tracks.

I asked Mr. Greenberg about the integrity of the tanks on site. He stated that nothing was known on the condition of the tanks. The tanks are all about 10,000 gallons. Mr. Greenberg again stated that the tanks will be removed, and he invited us to be present during the excavation. We directed him to contact the NJDEP/DWR/BUST for regitration and excavation requirements.

I again asked about the tenants on site. Mr. Piscitelli stated that none of the tenants on site generate hazardous waste. The current tenants on site are as follows:

ICF- Environmental Contractor -Equipment Storage

Hooks Beverage

Brooks -Fire Control Equipment

Spruce Industries - Sanitary Products

Spotfield Productions- Stage Props

New Mints- Sportswear

Apple Knoll Printers -Warehouse

Textiles By Peterson

Lemer Packaging

Exel Air- Air conditioning and heating contractor

Team Plastics

Gum and Pockets

Cheyenne Ceiling- Interior Contractor

K-Wood working

Exxon- Record Storage

Donna Restivo and I depart site 0950 hours.

ATTACHMENT M

ATTACHMENT N

ECRA-002
12/87

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
INDUSTRIAL SITE EVALUATION ELEMENT
CN 028, TRENTON, N.J. 08625

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

INITIAL NOTICE

SITE EVALUATION SUBMISSION (SES)

This is the second part of a two-part application form. This information must be submitted within 45 days following any applicable situation as specified at N.J.A.C. 7:26B-1.5 or any triggering event as specified at N.J.A.C. 7:26B-1.6. Please refer to the instructions and N.J.A.C. 7:26B-3.2 before filling out this form. Answer all questions. Should you encounter any problems in completing this form, we recommend that you discuss the matter with a representative from the Element. Submitting incorrect or insufficient data may cause processing delays and possible postponement of your transaction. Please call (609) 633-7141 between the hours of 8:30 a.m. and 4:30 p.m. to request assistance.

PLEASE PRINT OR TYPE

Date 12-2-88

1. Industrial Establishment

Name Charter Tool Company, Inc.

Address 624 South Avenue

City or Town Garwood Zip Code 07027

Municipality _____ County Union

A. Operational and Ownership History: *(Attach additional sheets if necessary)*

Name	Owner/ Operator	From	To	Current Address
A.C.P. Trust	Owner	1975	Present	1610 Vauxhall Road Union, NJ 07083
Charter Tool Co.	Operator	4/28/81	5/11/88	624 South Avenue Garwood, NJ 07027
Triangle Tool Co.	Operator	5/11/88	Present	624 South Avenue Garwood, NJ 07027

B. Brief description of past operation(s) conducted on site *(Attach additional sheets if necessary)*

Since 1981 the industrial establishment has been a tool and die operation. No information is available prior to 1981.

ATTACHMENT N-1

2. List all federal and state environmental permits applied for, or received, or both, at this facility *(Attach additional sheets if necessary)*

Check here if no permits are involved _____

A. New Jersey Bureau of Air Pollution Control

Permit Number	Certificate Number	Date of Approval or Denial	Reason for Denial (if applicable)	Expiration Date

B. New Jersey Pollutant Discharge Elimination System (NJPDES)

Number	Discharge Activity	Date Issued or Denied	Expiration Date	Body of Water Discharged Into

C. United State Environmental Protection Agency (EPA) Identification Number and copy of the most recent generator Annual Report prepared pursuant to the New Jersey Hazardous Waste Regulations. *(If applicable)*

ID # _____

Is a copy of the Annual Report attached? _____ Yes (See Attachment #_____) _____ No

D. Resource, Conservation, Recovery Act (RCRA) Permit # _____

E. Bureau of Underground Storage Tank Registration Number(s) 0085250 (A.C.P. Trust)

F. All other federal, state, local governmental permits.

Agency Issuing Permit	Permit No.	Date of Approval or Denial	Expiration Date

3. Summary of Enforcement Actions for Violation of Environmental Laws or Regulations:

Check here if no enforcement actions are involved X

A. Date of Action _____

Section of Law or Statute violated _____

Type of Enforcement Action _____

Description of the Violation _____

How was the violation resolved? _____

B. Date of Action _____

Section of Law or Statute violated _____

Type of Enforcement Action _____

Description of the Violation _____

How was the violation resolved? _____

4. Site Map

Is this map enclosed? X Yes (See Attachment # 2) ____ No

If No, state the reason _____

(Attach additional pages, if necessary)

5. Decription of Operations:

Is this report enclosed? X Yes (See Attachment # 1) ____ No

If No, state the reason _____

6. Description of Building Heating System:

A. How is the Industrial Establishment currently heated? (Oil, Gas, Electric) Oil

How long has the Industrial Establishment been heated by the above fuel/energy source: At least 13 years

B. Was the Industrial Establishment heated by fuel oil at any time: x Yes ____ No

Is information on the decommissioning of underground fuel oil tanks included with item No. 14 of this form?

____ Yes x No If no, explain below: No underground fuel tanks have been decommissioned at the site by the Landlord.

C. Are the results of the Integrity Evaluation for Existing Underground Fuel Oil Tanks enclosed?

____ Yes (See Attachment #_____) x No If no, state the reason No integrity evaluation has been performed by the Landlord to my knowledge.

7. Summary of Industrial Establishment Wastewater Discharges of Sanitary and/or Industrial Waste:

A.

Discharge Period From	To	Discharge Type	Treatment By
1981	Present	Sanitary	Sewer hook-up

B. If the Industrial Establishment discharges sanitary and/or industrial wastes to a publicly-owned treatment plant, provide the name/address of that facility.

Name Rahway Valley Sewerage Autho. Telephone # (201) 388-0868

Street Address 1050 E. Hazelwood Avenue

Municipality Rahway State NJ Zip Code 07065

	Date(s) of Discharge	Nature of Discharge
1.	1981-Present	Sanitary
2.		
3.		

8. Hazardous Substance and Waste Containment Description: *(Attach additional sheets if necessary)*

Type of Storage Unit	Date Installed	Area or Volumetric Capacity (include units)	Material Stored	Construction Type	Location Reference	Decommissioning or Sampling Reference
Underground tank	before 1975	500 gallons	Fuel Oil	Steel	See #9 below	

9. Hazardous Substance/Waste Inventory:

Material Name	Quantity (Indicate units)	Location Reference	Storage Method Container Type/Size	Typical Annual Usage	To Remain on Site (Yes or No)
Lubricating Oil	40 gal.	K-2 (See Attachment #2)	5 gallon plastic pails	5 gal.	Yes
EDM Oil	80-100 gal.	K-2	55 gallon steel drums *	55 gal.	Yes
Soluble Oil	50-60 gal.	K-2	5 gallon plastic pails	10 gal.	Yes
Fuel Oil	500 gal.	Parking Lot adjacent to K-2	Steel tank	1,200 gal.	Yes
			* Ordinarily contained inside Electrical Discharge Machining (EDM) equipment.		

ATTACHMENT W-5

10. Discharge History of Hazardous Substances and Wastes:

A. Have there been any discharges of hazardous substances and wastes?
____Yes (Complete Item B below) _x_No (Go to Item 10C)

B. Summary of Discharges and Resolutions

Description of Discharge Event	Response and Resolutions

C. Is this Industrial Establishment subject to Spill Prevention Control and Countermeasure (SPCC) per 40 CFR Part 112 or Discharge Prevention, Containment and Countermeasure (DPCC) Plan per NJAC 7:1E-4.1 requirements?

____Yes _x_No A copy of the Plan(s) may be required at the discretion of the Department.

11. Sampling Plan Proposal

A. Is sampling proposed at the facility? ____Yes (See Attachment #_____) No_x_

If sampling is not proposed, please explain below. *(Attach additional sheets if necessary)*

There have been no spills at the site to my knowledge..

B. Is groundwater sampling proposed? ____Yes _x_No

Note: If groundwater sampling is proposed under the plan, you must complete ECRA Form 002A "Request for Hydrogeologic Assessment" and submit it with the application.

ATTACHMENT N-6

12. Decontamination/Decommissioning Plan

A. Is the facility Decontamination/Decommissioning Plan enclosed?

_____Yes (See Attachment #_____) __X__No

B. If no, specify why decontamination/decommissioning is not considered necessary.

The business is continuing in operation.

13. Historical Data on environmental quality at the Industrial Establishment

A. Were sampling results obtained on Environmental Quality for the Industrial Establishment?

_____Yes (See Attachment #_____) __X__No

B. If sampling results were obtained but are not part of this application, please explain below:

14. List any other information you are submitting or which has been formally requested by the Department:

Description	Attachment #

FEE CHECKLIST

Include below a breakdown of the total fee submitted with this application. (See N.J.A.C. 7:26B-1.10 for the appropriate fees.)

Item	Amount ($)
1. Initial Notice Review	
i. Without Sampling Plan	250.00
ii. With Sampling Plan that includes only underground storage tank analysis without groundwater monitoring	
iii. With Sampling Plan other than ii. above or iv. below	
iv. With Sampling Plan that includes any groundwater monitoring	
2. Sampling Data Review	
3. Negative Declaration Review	
4. Cleanup Plan Review	
5. Oversight of Cleanup Plan Implementation	
TOTAL FEE ENCLOSED	$ 250.00

ARE FEES ENCLOSED? __X__ **YES**

CERTIFICATIONS:

A. The following certification shall be signed by the highest ranking individual at the site with overall responsibility for that site or activity. Where there is no individual at the site with overall responsibility for that site or activity, this certification shall be signed by the individual having responsibility for the overall operation of the site or activity.

I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 13:1K-6 et seq., I am personally liable for the penalties set forth at N.J.S.A. 13:1K-8.

Typed/Printed Name Walter Sarre Title President

Signature Walter Sarre Date 11-25-88

Sworn to and Subscribed Before Me
on this
Date of 11/25 19 88

Notary

ROY DICKES
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires June 11, 1992

B. The following certification shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of N.J.S.A. 13:1K-6 et seq., I am personally liable for the penalties set forth at N.J.S.A. 13:1K-8.

Typed/Printed Name Walter Sarre Title President

Signature Walter Sarre Date 11-25-88

Sworn to and Subscribed Before Me
on this
Date of 11/25 19 88

Notary

ROY DICKES
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires June 11, 1992

ATTACHMENT #1

DESCRIPTION OF OPERATIONS REPORT

No information is available prior to 1981.

Since 1981, the industrial establishment has been a tool and die operation. The processes involved in this operation are:

Cutting of forming tools out of steel and aluminum for the die casting and plastic injection molding industry. In the operation of using mills (cutting tools) soluble oil, oil mixed with water are used to extend the life of the tools.

Surface grinding on steel is also done here. A dust collection system is used here to collect grinding chips. We also use what is called E.D.M. (Electrical Discharge Machining). Here we use electrodes to erode away steel to the shape of the electrodes. This is done under an oil solution which is recycled through filters on the machine itself.

Enclosure #886(

ATTACHMENT N-10

ATTACHMENT O

Data Chart for Tank System Tightness Test

PLEASE PRINT

1. OWNER Property [X] Tank(s) [ ]

ALFRED PISCETELLI (201)687-7503
Name — Address — Representative — Telephone

BELL FACTORY TEMINAL 1610 VAUX HALL RD, IRVINGTON 07111
Name — Address — Representative — Telephone

2. OPERATOR

TRIANGLE TOOL 624 SOUTH AVE., GARWOOD, NJ
Name CHARTERTOOL — Address — Telephone

3. REASON FOR TEST (Explain Fully)

PROPERTY SALE

4. WHO REQUESTED TEST AND WHEN

MR. W. SARRE — TRIANGLE TOOL — 5/89
Name — Title — Company or Affiliation — Date

83 MALI DR. NO. PLAINFIELD, NJ 753-2240
Address — Telephone

5. TANK INVOLVED Use additional lines for manifolded tanks

Identify by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel/Fiberglass
COURT YARD	550	HEATING OIL	#2	10 YRS +	STEEL

6. INSTALLATION DATA

Location	Cover	Fills	Vents	Siphones	Pumps
INSIDE COURT AREA	BLACK TOP	2"	1"	-	SUCTION
North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Titefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

7. UNDERGROUND WATER

Depth to the Water table > 80 ft.

Is the water over the tank? [ ] Yes [X] No

8. FILL-UP ARRANGEMENTS

Tanks to be filled ____ hr. ____ Date Arranged by ____ Name Telephone

Extra product to "top off" and run tank tester. How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry ____ Company Name Telephone

9. CONTRACTOR, MECHANICS, any other contractor involved

10. OTHER INFORMATION OR REMARKS

Additional information on any items above. Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test, etc.

11. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
HEATING OIL	YES	-.004 GPH	5/25/89

12. SENSOR CERTIFICATION

5/24/89
Date

1836
Serial No. of Thermal Sensor

13. This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 329.

Technicians

1. BILL WURTZ
Certification # 120812900

2. ____
Certification # ____

ENVIRONMENTAL SERVICES DIVISION
Testing Contractor or Company. By: Signature

532 FREEMAN STREET, ORANGE, NJ 07050
Address

ATTACHMENT O

ATTACHMENT P

CN 028
Trenton, N.J. 08625-0028

(609)633-7141

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

Michele M. Putnam
Deputy Director
Hazardous Waste Operations

John J. Trela, Ph.D., Director

Lance R. Miller
Deputy Director
Responsible Party Remedial Action

Thomas C. Kelly
Meyner and Landis
One Gateway Center
Suite 2500
Newark, NJ 07102-5311

SEP 15 1989

Dear Mr. Kelly:

RE: Industrial Establishment: Charter Tool Co., Inc.
Location: 624 South Avenue, Garwood Boro., Union County
Block: 21 Lot: 1
ECRA Case #88825
Transaction: Sale of Business
Negative Declaration: By Operator Dated: August 18, 1989

Pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (DEP) by the Environmental Cleanup Responsibility Act (ECRA, N.J.S.A. 13:1K-6 et seq.) and duly delegated to the Assistant Director of the Industrial Site Evaluation Element pursuant to N.J.S.A. 13:1B-4, the referenced Negative Declaration is hereby approved. This approval is based upon information provided in your Initial Notice as well as DEP investigation of the site.

Since operations have continued at this location after completion of the transaction, it is recognized that limited quantities of hazardous substances associated with the on-going activities remained on the property. These materials--as specified in your Initial Notice, considered complete by this office on June 12,1989 were acceptable under the under the provisions of ECRA. The subsequent cessation of operations at the above referenced Industrial Establishment will be addressed under an ECRA filing for Triangle Tool.

This approval shall be limited to the above referenced transaction only and shall not restrict or prohibit the DEP or any other agency from taking regulatory action under any other statute, rule or regulation.

Sincerely,

Kenneth T. Hand

Karl J. Delaney, Assistant Director
Industrial Site Evaluation Element

RJC/cam

ATTACHMENT P-1

ATTACHMENT Q

NJS 000 601 038

ECONOMICS LABORATORY, INC.
OSBORN BUILDING, ST. PAUL, MINNESOTA 55102

LAW DEPARTMENT

TELEPHONE: (612) 293-2233
TWX: (910) 563-3739
TELEX: 297427

June 5, 1981

10 JUN 1981

Writer's Direct Dial Number:
(612) 293-2283

CERTIFIED MAIL

United States Environmental
Protection Agency Region 2
Sites Notification
New York, New York 10007

Re: Superfund Notification Under Section 103(c)

Gentlemen:

In accordance with the notification requirements of Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund), we enclose one Notification of Hazardous Waste Site form relating to a former Economics Laboratory plant site in Garwood, New Jersey.

If you have any questions regarding the filing of this notification form, please contact the undersigned at the address indicated above.

Very truly yours,

ECONOMICS LABORATORY, INC.

Janice Mileo
Attorney

JM:mb

Enclosure

cc: D. R. Rodel

ATTACHMENT 2-1

Agen
Washin

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

10 JUN 1981

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

81605

NJS 000 001 05

A Person Required to Notify:

Enter the name and address of the person or organization required to notify.

Name: Economics Laboratory, Inc.

Street: Osborn Building, 370 Wabasha

City: St. Paul State: MN Zip Code: 55102

B Site Location:

Enter the common name (if known) and actual location of the site.

980530265

Name of Site: Magnus Chemical Co. Plant

Street: 608 South Avenue

City: Garwood County: Union State: NJ Zip Code: 07027

C Person to Contact:

Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Mileo, Janice - Attorney

Phone: (612) 293-2283

D Dates of Waste Handling:

Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 1964 To (Year): 1971

See Section I Below.

E Waste Type: Choose the option you prefer to complete

Option I: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☒ Organics
2. ☒ Inorganics
3. ☒ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

_____
_____
_____

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☒ Other (Specify)

(Specialty date genra and [illegible] chemical compounds, etc

Option 2: This option is available to persons familiar with th Resource Conservation and Recovery Act (RCRA) Section 30 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous wa listed in the regulations under Section 3001 of RCRA. Enter appropriate four-digit number in the boxes provided. A copy the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the si located.

ATTACHMENT Q-2

Form Approved
OMB No. 2000-0138

EPA Form 8900-1

...facility types found ... e site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

2. ☐ Land Treatment
3. ☐ Landfill
4. ☒ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☒ Other (Specify) (Possible leakage from underground storage tanks)

cubic feet Unknown.

gallons

Total Facility Area

square feet See Section I Be

acres

G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☐ Suspected ☐ Likely ☒ N

*To the best of our knowle

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and asses hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Section D - Dates of Waste Handling:
Economics Laboratory acquired Magnus Chemical Company in 1964 and operated the plant site from 1964-1971. Magnus Chemical Company operated the site for approximately 25 years prior to that time.

Section F - Total Facility Area:
The underground storage tanks in question are located under a parking lot of approximately 10,000 square feet on the plant site. The tanks had, to the best of our recollection, a total storage capacity of approximately 50,000 gallons.

Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the per... required to notify. If you are ... to notify check "Other"

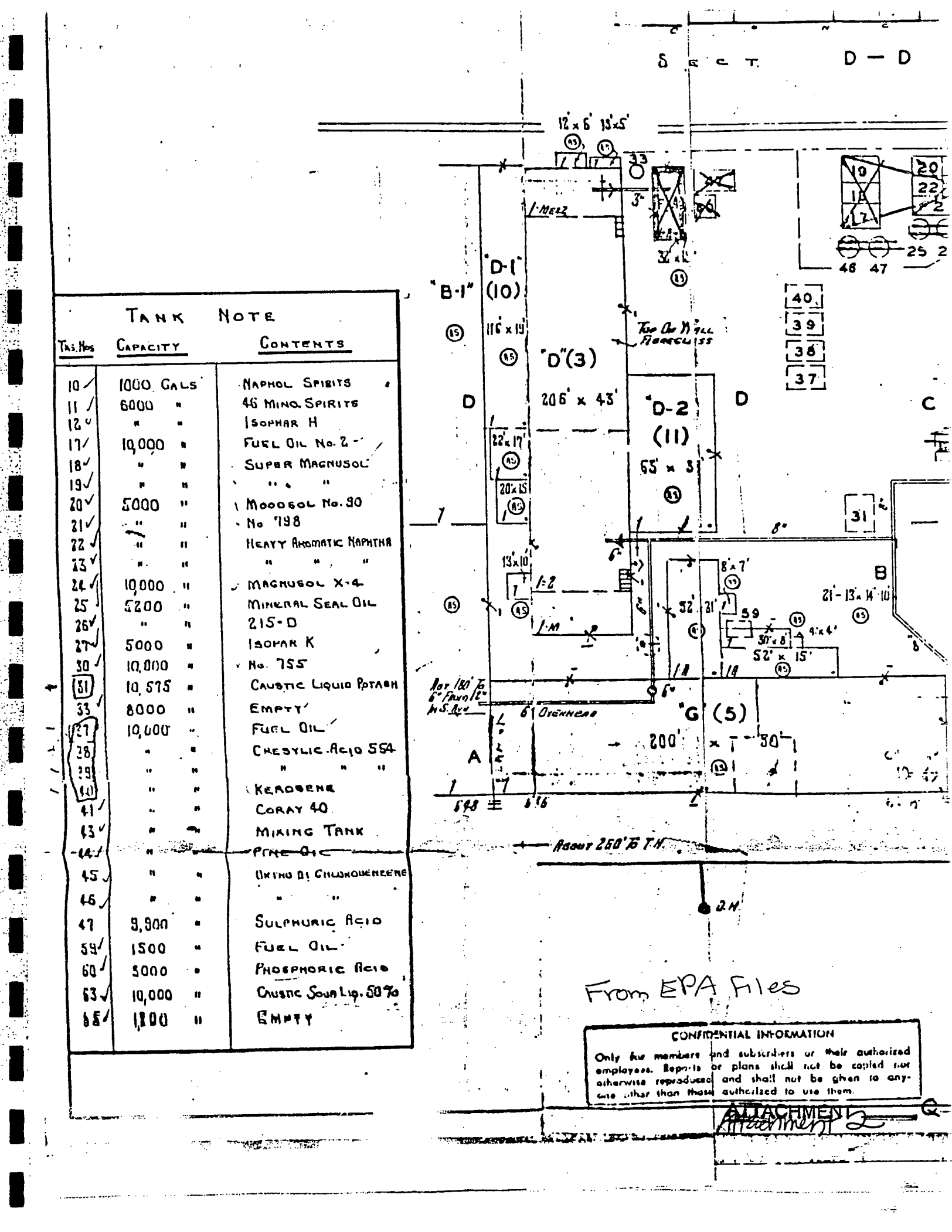
Name Economics Laboratory, Inc.
Donald R. Rodel - Vice President, Manufacturing

Street Osborn Building, 370 Wabasha

City St. Paul MN Zip Code 55102

☐ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☒ Operator, Past
☐ Other

ATTACHMENT Q-3 4/5/81



TANK NOTE

Tks. Nos	Capacity	Contents
10	1000 Gals	Naphol Spirits
11	6000 "	46 Mino. Spirits
12	" "	Isophar H
17	10,000 "	Fuel Oil No. 2
18	" "	Super Magnusol
19	" "	" " "
20	5000 "	Moodsol No. 90
21	" "	No 198
22	" "	Heavy Aromatic Naphtha
23	" "	" " "
24	10,000 "	Magnusol X-4
25	5200 "	Mineral Seal Oil
26	" "	215-D
27	5000 "	Isopar K
30	10,000 "	No. 755
31	10,575 "	Caustic Liquid Potash
33	8000 "	Empty
37	10,000 "	Fuel Oil
38	" "	Cresylic Acid 554
39	" "	" " "
40	" "	Kerosene
41	" "	Coray 40
43	" "	Mixing Tank
44	" "	Pine Oil
45	" "	Ukno Di Chlorobenzene
46	" "	" "
47	9,900 "	Sulphuric Acid
59	1500 "	Fuel Oil
60	5000 "	Phosphoric Acid
63	10,000 "	Caustic Soda Liq. 50%
65	1100 "	Empty

ATTACHMENT R

MEMO
TO: FILE
FROM: ANDREW CYR NJDEPE/DRPSR/BSA
SUBJECT: ACP TRUST 502-650 SOUTH AVE. GARWOOD USTS

ON JANUARY 2, 1992 I SPOKE WITH STEVE CATER OF NJDEPE/DRPSR/BUST ABOUT THE CURRENT STATUS OF THE USTS ON THE ACP TRUST PROPERTY. HE STATED THAT ACP TRUST HAS FIVE ACTIVE TANKS REGISTERED WHICH INCLUDE: E017 5,000-GALLON KEROSENE, E018 1,000-GALLON HYDRAULIC OIL, E019 3,000-GALLON UNLEAD GAS AND TWO 3,000-GALLON HEATING OIL TANKS E020 AND E021. HE ALSO STATED THAT 10 USTS WERE REMOVED IN JANUARY 1990. HE ALSO STATED THAT ACP TRUST HAS ONLY 15 TANKS REGISTERED WITH BUST. HOWEVER IN 1986 ACP HAD 21 TANKS REGISTERED.

ATTACHMENT R

ATTACHMENT S

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091

(201) 789-8550

FAX (201) 789-8660

AUG 27 1990

HENRY FARER
MARTIN F. SIEGAL
JACK FERSKO
DAVID B. FARER
STEPHEN L. RITZ
RICHARD J. ERICSSON

ANN M. WAEGER
HEIDI S. MINUSKIN
REBECCA C. CRONEBERGER
DANIELE CERVINO
BARBARA J. KOONZ
JAY A. JAFFE
BETH D. POLLACK

August 17, 1990

Via Telecopier and Regular Mail

Andrew Cyr, Project Manager
New Jersey Department of Environmental Protection
Hazardous Waste Management
Bureau of Planning and Assessment
401 East State Street 5th Floor
Trenton NJ 08625

Re: A.C.P. Trust t/a Bell Factory Terminal
Premises: 502-650 South Avenue
Garwood, NJ
Our File No. 010601

Dear Mr. Cyr:

This confirms our telephone conversation of August 16, 1990 regarding the removal of five underground storage tank ("tanks") by A.C.P. Trust t/a Bell Factory Terminal ("ACP") from the above-referenced premises ("premises").

As we advised you, ACP has retained Environmental Waste Management Associates ("EWMA") as its environmental consultant, to clean out the tanks. After the cleaning is completed, the tanks will be excavated. It is anticipated that the tanks will be removed on either August 22, 1990 or August 23, 1990, depending on when the tank cleaning is completed. We agreed to contact you the day before the tanks are to be removed.

During our conversation we asked why DEP's Bureau of Planning and Assessment was investigating the premises. You advised us that the premises is the subject of a DEP investigation due to the potential of hazardous waste existing at the premises resulting from the former operations of Economic Laboratories Corp. and Magnus Chemical Corporation at the site. DEP is reviewing the property to

ATTACHMENT S-1

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW

determine whether any further action needs to be undertaken at the premises. You stated that you would be completing a report and would forward a copy of the report to us.

Heidi S. Minuskin
HSM:jmb
cc: A.C.P. Trust t/a Bell Factory Terminal

ATTACHMENT S-2

ATTACHMENT T

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091

(201) 789-8550

FAX (201) 789-8660

August 24, 1990

Via Telecopier and Regular Mail

Andrew Cyr, Project Manager
New Jersey Department of Environmental Protection
Hazardous Waste Management
Bureau of Planning and Assessment
401 East State Street 5th Floor
Trenton NJ 08625

Re: A.C.P. Trust t/a Bell Factory Terminal
Premises: 502-650 South Avenue
Garwood, NJ
Our File No. 010601

Dear Mr. Cyr:

This confirms our telephone conversation of August 21, 1990 regarding the removal of five underground storage tank ("tanks") by A.C.P. Trust t/a Bell Factory Terminal ("ACP") from the above-referenced premises ("premises").

As you know, the fuel oil underground storage tank ("tank") and the gasoline underground storage tank ("tank") were removed from the premises on August 20, 1990. Present at the time of removal was Deborah Ford of the New Jersey Department of Environmental Protection ("DEP") Metro Field Office. At the time of removal, the tanks were found to be in good condition, with no evidence of any leakage or discharge.

This also confirms that the tanks containing cresylic acid and potash will be removed on August 28, 1990.

In line with your request, here is a copy of ACP's Underground Storage Tank Registration Questionnaire, the Standard Reporting Form for the removal of the tanks submitted and the Registration Certificate pertaining to the five tanks.

ATTACHMENT F-1

.RER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW

If you have any questions, please contact us.

Heidi S. Minuskin
HSM:jmb
enclosure
cc: A.C.P. Trust t/a Bell Factory Terminal

ATTACHMENT I-2

Underground Storage Tank
Registration Certificate

BELL FACTORY TERMINAL
550 SOUTH AVENUE
GARWOOD NEW JERSEY 07027

DIVISION OF WATER RESOURCES
BUREAU OF UNDERGROUND STORAGE TANKS
CN 029
TRENTON, NEW JERSEY 08625

UST No. 0191153

The above listed facility has complied with P.L. 1986,c.102 and has duly registered with the NJDEP.
(Facility name and location if different than above)

NAME: ACP TRUST

ADDRESS: PO BOX 222
GARWOOD NEW JERSEY 07027

ON-SITE MANAGER: CHARLES PISCITELLI

TELEPHONE: (201) 322-7137

NO. OF TANKS: 5

PRODUCT(S) STORED:
CAUSLIQ POTASH
MEDIUM DIESEL FUEL (NO. 2-D)
CRESYLICACID
KEROSENE (NO. 1)

EFFECTIVE DATE: 04-01-90 EXPIRATION DATE: 03-31-91

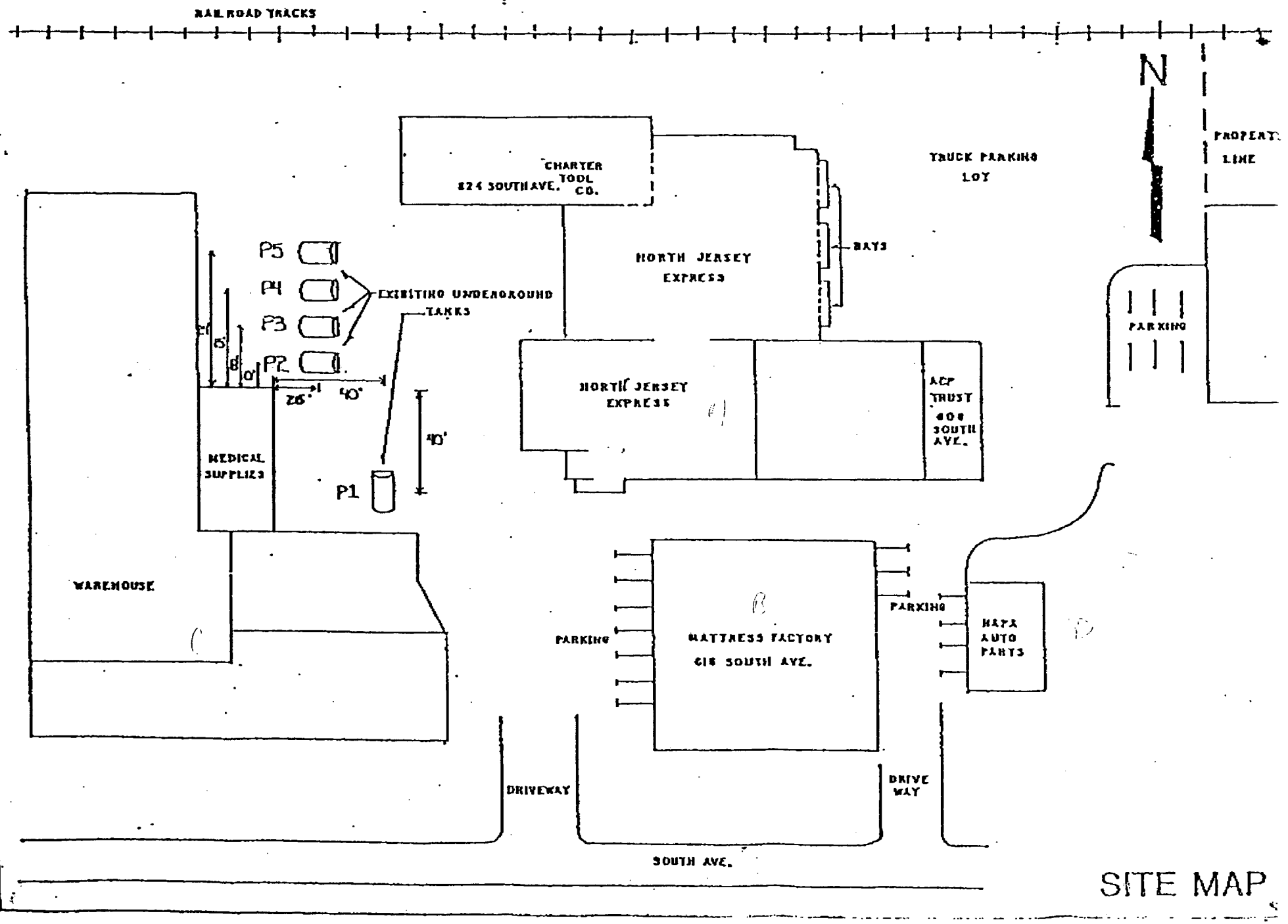
NC-5 (4/89)

THIS FORM MUST BE AVAILABLE FOR INSPECTION AT THE FACILITY AT ALL TIMES

New Jersey Department of Environmental Protection

ATTACHMENT T-3

FROM 201-825-2105 PG1



ATTACHMENT 1

ATTACHMENT U

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091

(908) 789-8550

FAX (908) 789-8660

HENRY FARER
MARTIN F. SIEGAL
JACK FERSKO
DAVID B. FARER
STEPHEN L. RITZ
RICHARD J. ERICSSON

ANN M. WAEGER
HEIDI S. MINUSKIN
REBECCA C. CRONEBERGER
DANIELE CERVINO
JAY A. JAFFE
BETH D. POLLACK
ANDREW W. KRANTZ
LAWRENCE F. JACOBS

June 5, 1991

Andrew Cyr, Project Manager
New Jersey Department of Environmental Protection
Bureau Planning & Site Assessment Section
Division of Hazardous Waste Management
CN-028
Trenton, NJ 08625

Re: A.C.P. Trust t/a Bell Factory Terminal
Premises: 502-650 South Avenue
Garwood, Union County, New Jersey
Our File No.: 010601

Dear Mr. Cyr:

This confirms our telephone conversation regarding the soil waste classification analysis performed on behalf of our client, A.C.P. Partnership ("ACP"), by Environmental Waste Management Associates ("EWMA"), ACP's environmental consultant for the soil excavated during the underground storage tank removal at the above referenced premises.

As you know, the underground storage tanks were removed pursuant to the then-applicable federal underground storage tank regulations. A site assessment was performed which involved visual inspection of the underground storage tanks as well as the excavation. You, Debra R. Ford of DEP's Metro Bureau of Regional Enforcement, Division of Water Resources and representatives of EWMA inspected the underground storage tanks and the excavation. The tanks were found to be in good condition and there was no evidence of leakage. Therefore, no soil samples were collected, and no such sampling was required pursuant to the law.

Waste classification samples were collected and analyzed for soil disposal. Here is a copy of the Analytical Data Report for the waste classification and analysis. The analysis was performed by Integrated Analytical Laboratories, Inc., a New Jersey certified laboratory. Based upon the waste classification results, the soil was disposed of as a RCRA non-hazardous material. As we advised you, the excavations were backfill with clean soil and then paved over.

ATTACHMENT U-1

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW

Given the fact that the site assessment confirmed that no leaks had occurred from the underground storage tanks, no further work should be required. No groundwater was encountered during the excavation. Therefore, we ask that you confirm to us that the matter has been closed.

If you have any questions, please contact us.

Heidi S. Minuskin
HSM:bab
Enclosures
cc: A.C.P. Partnership

ATTACHMENT U-2

Integrated Analytical Labs

Integrated Analytical Laboratories, Inc.

150 Railroad Avenue
Paterson, N.J. 07501

201-523-2509
Fax # 201-523-2818

ANALYTICAL DATA REPORT

For

Environmental Waste Management Associates
1235A Route 23 South
Wayne, NJ 07470

PROJECT: Bell Factory Terminal (90107)
LAB CASE NO: 10900-651
DATE RECEIVED: December 19, 1990

CLIENT SAMPLE ID	LABORATORY SAMPLE #
WC-1	651001

All NJDEP protocol was followed during analysis. These data have been reviewed and accepted by:

Michael H. Leftin, Ph.D.
Laboratory Director

ATTACHMENT U-3

INTEGRATED ANALYTICAL LABORATORIES, INC.

TABLE OF CONTENTS

ATTACHMENT U-4

INTEGRATED ANALYTICAL LABORATORIES, INC.

QUALIFIERS

U - Indicates the compound was analyzed for but was not found.

J - This indicates an estimated value. The compound was detected at a value below the minimum detection limit and greater than zero. For GC/MS procedures the mass spectral data meets the criteria required to identify the target compound.

B - Indicates the analyte was found in the blanks and in the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

D - Indicates the surrogate was dulited out and not detected.

All values are corrected for original sample size and percent solids.

LDL - Lower Detection Limit (of the instrument/method)
MDL - Method Detection Limit
DF - Dilution Factor

ATTACHMENT U-5

INTEGRATED ANALYTICAL LABORATORIES, INC.

Client: EWMA
Job: 10900-651

P.O. #: 3586

Date Sampled: 12/17/90
Sampled by: M.D.
Client ID: WC-1

Date Received: 12/19/90
Received by: B.D.
Lab ID: 651001

GENERAL	Result		MDL	Comment
pH-corrosivity	8.80	SU	0.01	noncorrosive
Cyanide, Total	ND	mg/kg	0.30	nonreactive
Sulfide, Reactive	ND	mg/kg	21.0	nonreactive
Flash Point-ignitability	> 160	F	5	nonignitable
Total Petroleum Hydrocarbons	860	mg/kg	28.0	

TCLP METALS	Concentration		MDL
Arsenic	0.0005	mg/l	0.0005
Barium	ND	mg/l	0.25
Cadmium	0.06	mg/l	0.01
Chromium	ND	mg/l	0.01
Lead	0.10	mg/l	0.06
Mercury	ND	mg/l	0.0005
Nickel	ND	mg/l	0.03
Selenium	0.005	mg/l	0.0005
Silver	ND	mg/l	0.02

PCB's			
PCB, total	ND	mg/kg	0.403
Dibutylchlorendate	59.3	% Recovery	0.403

ND = None Detected
MDL = Method Detection Limit

ATTACHMENT U-6

INTEGRATED ANALYTICAL LABORATORIES, INC.

Client: EWMA
Case No.: 10900-651
Matrix: Soil

Lab ID: 651001
Client ID: WC-1
TCLP Matrix: Water

TCLP ORGANICS

HERBICIDES/PESTICIDES

Date Extracted: 12/28/90
Date Analyzed: 01/08/91

TCLP Extract: 12/20/90
Method Blank: KAN82
Units: mg/l

Compound	Concentration	MDL
Chloradane	ND	0.005
2,4-D	ND	0.003
Endrin	ND	0.003
Heptachlor	ND	0.003
Heptachlor epoxide	ND	0.003
Lindane	ND	0.003
Methoxychlor	ND	0.003
Silvex	ND	0.018
Toxaphene	ND	0.007

VOLATILES

TCLP Extracted: 12/31/90
Date Analyzed: 01/03/91

Method Blank: VB0103
Units: mg/l

Compound	Concentration	MDL
Benzene	ND	0.005
Carbon tetrachloride	ND	0.005
Chloroform	ND	0.005
Chlorobenzene	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethylene	ND	0.005
Methyl ethyl ketone	ND	0.200
Pyridine	ND	0.200
Tetrachloroethylene	ND	0.005
Trichloroethylene	ND	0.005
Vinyl chloride	ND	0.010

SEMIVOLATILES

Date Extracted: 12/27/90
Date Analyzed: 01/02/91

TCLP Extract: 12/20/90
Method Blank: SBW0102
Units: mg/l

Compound	Concentration	MDL
Cresol, Total	ND	0.030
1,4-Dichlorobenzene	0.004J	0.010
2,4-Dinitrotoluene	ND	0.010
Hexachlorobenzene	ND	0.010
Hexachloro-1,3-butadiene	ND	0.010
Hexachloroethane	ND	0.010
Nitrobenzene	ND	0.010
Pentachlorophenol	ND	0.020
2,4,5-Trichlorophenol	ND	0.010
2,4,6-Trichlorophenol	ND	0.010

ATTACHMENT U-7

INTEGRATED ANALYTICAL LABORATORIES, INC.

SURROGATE RECOVERY
TCLP HERBICIDES/PESTICIDES

Client ID	Lab ID#	Matrix	S1	S2	Total Out
WC-1	651001	Water	108	125	0

EPA CLP QC Limits for:		Water
S1	Chloropehnoxy propanoic acid	(No EPA QC Limit)
S2	Dibutylchlorendate	(24-154)

SURROGATE RECOVERY
TCLP VOLATILE ORGANICS

Client ID	Lab ID#	Matrix	S1	S2	S3	Total Out
WC-1	651001	Water	108	102	95.7	0

EPA CLP QC Limits for:		Water
S1	1,2-Dichloroethane-d4	(76-114)
S2	Toluene-d8	(88-110)
S3	4-Bromofluorobenzene	(86-115)

ATTACHMENT U-8

INTEGRATED ANALYTICAL LABORATORIES, INC.

SURROGATE RECOVERY
TCLP BASE/NEUTRAL EXTRACTABELS

Client ID	Lab ID#	Matrix	S1	S2	S3	Total Out
WC-1	651001	Water	72.5	72.4	66.2	0

EPA CLP QC Limits for:		Water
S1	Nitrobenzene-d8	(35-114)
S2	2-Fluorobiphenyl	(43-116)
S3	Terphenyl-d14	(33-141)

SURROGATE RECOVERY
TCLP SEMIVOLATILE ORGANICS
ACID EXTRACTABLES

Client ID	Lab ID#	Matrix	S1	S2	S3	Total Out
WC-1	651001	Water	20.5	42.5	43.2	0

EPA CLP QC Limits for:		Water
S1	Phenol-d5	(10-94)
S2	2-Fluorophenol	(21-100)
S3	Tribromophenol	(10-123)

ATTACHMENT U-9

INTEGRATED ANALYTICAL LABORATORIES, INC.

CHAIN OF CUSTODY

P.O. # 3586

90107

Client: EWMA Project: BELL FACTORY TERM. Sampling Date/Time: 12-17-90/1400

Report: (Please Circle) (Normal) 4 wks, 3 wks, (2 wks) RUSH

Format: (Please Circle) (Normal), Summary, ECRA, Tier II, Tier 1

Report to: LIZ DAVIS Bill To: EWMA

Case No.: 10900-651

# of Containers	4				
IAL ID#	65100 1				
Client ID#	WC1				
Matrix	S				
601 (8010)					
602 (8020)					
BTEX (8020)					
608-PCB (8080)	✓				
608-Pest (8080)					
Pest & Herb. TCLP	✓				
624 (8240)					
624, TCLP	✓				
624 + 15 (8240)					
MTBE, TBA					
625-BN (8270)					
625-BN + 15 (8270)					
625-BNA (8270)					
625-BNA, TCLP	✓				
625-BNA + 15 (8270)					
625-BNA + 25 (8270)					
PAH					
PAH + 15					
PP Metal					
EP Tox Metal	✓				
TCLP Metals	✓				
Cyanide, Total	✓				
Phenol	✓				
Sulfide, Reactive	✓				
Ignitability	✓				
Flash Point	✓				
TPHC	✓				
pH	✓				
Other					

Proper Preservation: Yes / No Sampled by: MIKE D.

Delivered by: DAVID B. OFFERMAN Signed: [signature] Date/Time: 12-19-90/4:15

CUSTODY TRANSFERRED :

Name: BARB. DIVER Signed: [signature] Date/Time: 12-19-90/415p

Comments:

ATTACHMENT U-10

Test Methods in parenthesis are for nonaqueous samples.

Integrated Analytical Labs

Integrated Analytical Laboratories, Inc.

SAMPLE CONTROL RECORD
LABORATORY CUSTODY CHRONICAL

Sampling Date: 12·17·90
Receipt Date: 12·19·90

Receipt Officer: BD
Case ID No.: 10900-651

Custody Seal — (Present)/Absent; (Intact)/Not Intact
Chain-of-Custody — Present/Absent
Sample Tags — Present/Absent; Listed/Not Listed on C.O.C.
Shipping Bill — Present/(Absent) No. _____

LABORATORY SAMPLE NUMBER	DATE/TIME REMOVED ANALYST INITIALS	EXTRACTION	ANALYSIS	DATE/TIME RETURNED ANALYST INITIALS
001	Sampled by EWMA		12.17.90/1400	
001	Received by IAL		12.19.90/415p	
001	12.26.90/12p RP		pH	12.26.90/1210p RP
001	12.26.90/1210p RP		FP	12.26.90/1220pm RP
001	12.26.90/1150am RP		Solids	12.26.90/1130am RP
001	12.26.90/945am RP	TPHC		12.26.90/1030am RP
001	12.27.90/115am RP		TPHC	Consumed RP
001	12.28.90/1p BD	PCB		12.28.90/2p BD
001	01.09.91 8am Wojtek		PCB	01.09.91 12pm Wojtek
001	1.2.91/9am DK	TCN		1.2.91/1150am DK
001	1.2.91/12p DK		TCN	Consumed DK
001	1.2.91/9am DK	RS		1.2.91/1230p DK
001	1.2.91/1p DK		RS	Consumed DK
001	12.28.90/2p	Pest, Herb, TCLP		12.28.90/4p
001	12.27.90/245p KV	BNA, TCLP		12.29.90/11am KV
001	12.31.90/430p	ZHE		1.1.90/12p

REVIEW & APPROVAL N.A. Short 1/15/91

ATTACHMENT U-11

11. All underground tanks used after January 1, 1974 including those taken out of operation, **(UNLESS THE TANK WAS REMOVED FROM THE GROUND)** must be included in this registration. All in-ground tanks shall be reported as underground tanks on this questionnaire regardless of their current status; Existing, E; Abandoned, A; or Closed C.

SPECIFIC TANK INFORMATION

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
12. Tank Identification Number	0001	0002	0003	0004	0005
13. CASRN Number (Hazardous Substances Only)					
14. Tank Age (Years)	16	15	15	15	15
15. Tank Size (gallons)	005000	005000	005000	005000	005000
16. Tank Contents (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☒	☐	☒
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☒	☒	☐	☒	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
N. Other; Please Specify					
17. Tank and Piping Construction (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
B. Carbon steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
C. Stainless steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
D. Aluminum	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
E. Polyvinyl chloride	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
F. Concrete	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
G. Bronze	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
H. Earthen walls	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
J. Fiberglass reinforced plastic	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
K. Fiberglas-clad steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
L. Painted/asphalt steel	☒ / ☒	☐ / ☒	☒ / ☒	☒ / ☒	☒ / ☒
M. Vaulted	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
N. Composite	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
P. Iron (cast or ductile)	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
R. Non-metallic	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
S. Other; Please Specify					
18. Tank and Piping Structure (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Single wall	☒ / ☒	☒ / ☒	☐ / ☐	☒ / ☒	☐ / ☐
B. Double wall	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
C. Manway in tank	☐	☐	☐	☐	☐
19. Internal Tank and Piping Lining (MARK ONE X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Rubber	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
B. Epoxy	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
C. Alklyd	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
D. Phenolic	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
E. Glass	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
F. Clay	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
G. None	☒ / ☒	☒ / ☒	☒ / ☒	☒ / ☒	☒ / ☒
H. Other, Please Specify				ATTACHMENT 15	

Integrated Analytical Labs

Integrated Analytical Laboratories, Inc.

SAMPLE CONTROL RECORD
LABORATORY CUSTODY CHRONICAL

Sampling Date: 12.17.90
Receipt Date: 12.19.90

Receipt Officer: BDuin
Case ID No.: 10900-651

Custody Seal — (Present)/Absent
Chain-of-Custody — (Intact)/Not Intact
Sample Tags — (Present)/Absent
~~Present~~/Absent — (Listed)/Not Listed on C.O.C.
Shipping Bill — Present (Absent) No. _____

LABORATORY SAMPLE NUMBER	DATE/TIME REMOVED ANALYST INITIALS	EXTRACTION	ANALYSIS	DATE/TIME RETURNED ANALYST INITIALS
001	01.08.91 8^00 Wgh		HERB (TCLP)	01.08.91 12^00 Wgh
001	01.09.91 12^00 Wgh		PEST (TCLP)	01.09.91 15^00 Wgh
001	01.03.91 1.4^0 PCL		VO, TCLP	01.03.91 10.5^0 CL
001	01/02/91 1200 M		BNA TCLP	01/02/91 2000 M
~~001~~	~~01/03/91 1200 M~~			
~~001~~	~~01/04/91 12 M~~			
001	12/20-90 1300 Lm	TCLP Extr		12/20-90 1330 Lm
001	12/26-90 0500 Lm	Dig. 3015C		12/26-90 0830 Lm
001	12/27-90 0900 Lm	Dig. TCLP. Hg		12/27-90 0830 Lm
001	12/28-90 0830 Lm		TCLP	1/2-91 consumed Lm
001	12/28-90 1000 Lm		Hg	12/30-90 consumed Lm
001	12/27-90 1100 Lm		SE	12/27-90 consumed Lm
001	12/27-90 1400 Lm		AS	12/27-90 consumed Lm

REVIEW & APPROVAL V. A. Shortt 1/15/91

ATTACHMENT U-12

LAB NAME:

Integrated Analytical Laboratories, INc.

150 Railroad AVenue

Paterson, New Jersey 07501

CHAIN OF CUSTODY RECORD

Client: Environmental Waste Management Associates

Address: 1235A Route 23 South, P.O. Box 648

City: Wayne

State/Zip: New Jersey, 07474

Project: BELL FACTORY TERM

JOB # 90107

Customer P.O. ~~90107~~ 3586

Contact Person ELIZABETH DAVIS (EAD)

Deliverables (Circle One) Standard Tier I Tier II Other

Turnaround Time: NORMAL (2 WEEKS)

Sample Number	Field #	* M	** C	Description of Samples	Analytical Requests
651001	WC1	S	4	STOCKPILE	TCLP WASTE CLASS

Person(s) Assuming Responsibility for Sampling: M. O'Leary

Date: 12.17.90 Time: 1400

Relinquished by:	Received by:	Organization	Date	Time	Reason
M. O'Leary	R. Bell	EWMA	12.19.90	3:30	Delivery
R. Bell	B. Bowers	IAL	12.19.90	4:20 p	Analysis

Comments:

* M = Matrix (A) Aqueous, (F) Filter, (O) Oil, (S) Soil/Sludge, (X) Other

** C = Number of Containers

ATTACHMENT U-13

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES
200 Maltese Drive, Totowa, N.J. 07512
201-812-1500 FAX. 201-812-9293

PURCHASE ORDER

No. 3586

THIS ORDER NUMBER MUST APPEAR ON ALL PACKAGES, INVOICES AND SHIPPING PAPERS.

DATE 12·17·90

SHIP TO (SAME AS ABOVE UNLESS OTHERWISE NOTED.)

IAL

ORDERED FROM

BELL FACTORY TERM

PROJECT: #90107

PLEASE ENTER OUR ORDER IN ACCORDANCE WITH PRICES, DELIVERY AND SPECIFICATIONS GIVEN.

DATE REQUIRED	SHIP VIA (CHEAPEST WAY UNLESS OTHERWISE SPECIFIED)	F.O.B.	PPD.	COLL.	TERMS

QUANTITY ORDERED	QUANTITY RECEIVED	DESCRIPTION	UNIT PRICE	AMOUNT
1		SOIL: WASTE CLASS TCLP		

ACKNOWLEDGE ORDER IMMEDIATELY AND IF ANY ITEM CANNOT BE SHIPPED PROMPTLY, NOTIFY US.

BY M-10-7 (EAD)
AUTHORIZED SIGNATURE

ORIGINAL PURCHASE ORDER

ATTACHMENT U-19

ATTACHMENT V

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Resources
CN-029
Trenton, New Jersey 08625

0085250
ACP TRUST T/A BELL FACTORY

AUTH.	☐
SP. ROUTE	☐
SITE PLN.	☑
SIGN.	MB
COMCODE	20616

MAY 0 8 1988

UNDERGROUND STORAGE TANK REGISTRATION QUESTIONNAIRE

Bureau of Ground Water Quality Management
Underground Storage Tank Section
(609)984-9736

MAR 0 1 1990

JUL 2 2 1987

COMPLIANCE WITH THIS REGISTRATION WILL MEET ALL REGISTRATION REQUIREMENTS OF THE FEDERAL LAW, P.L. 93-616, THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984, SUBTITLE 1, SECTIONS 9001-9010.

General Facility Information

1. Facility name: ACP TRUST T/A BELL FACTORY TERM.
2. Facility location: 5021 TO 1651 SOUTH AVE
   NUMBER AND STREET
   GARWOOD
   CITY OR MUNICIPALITY
   UNION — COUNTY; NJ — STATE; 07027 — ZIP CODE
3. Owner's mailing address: 1611 VAUXHALL RD
   NUMBER AND STREET
   UNION
   CITY OR MUNICIPALITY
   UNION — COUNTY; NJ — STATE; 07083 — ZIP CODE
4. Owner's name: ACP TRUST
5. Contact person (Facility Operator) ALFRED CHARLES PISCITELLI
   PERSON OR TITLE
6. Contact telephone number: 201 — AREA CODE; 688 — EXCHANGE; 9109 — NUMBER
7. Total number of facility underground storage tanks: 0021 (Complete Questions 12 thru 33 for each tank)
8. Total facility underground storage tank capacity (gallons): 037850
9. Type and status of owner (mark all that apply).

A. ☐ CURRENT B. ☐ FORMER C. ☐ STATE OR LOCAL GOVERNMENT D. ☑ PRIVATE OR CORPORATE E. ☐ OWNERSHIP UNCERTAIN F. ☐ FEDERAL GOVT. (GSA FACILITY I.D. NUMBER)

10. Two copies of a site plan are submitted with this registration. A. ☒ YES B. ☐ NO

Submit two (2) copies of SITE PLAN showing facility or property boundary, buildings and the location of ALL underground storage tanks. EITHER, an existing engineering site plan, if available, OR a neat and legible hand-drawn sketch of the site may be submitted. In either case the site plan or sketch MUST show the location and distances that tanks, buildings, and dispensers are from the facility's property boundary. Include all tanks that are operating or existing, (E); abandoned, (A); or closed, (C). Each underground tank on the site plan or sketch shall be numbered in accordance with the instructions for question 12. The number assigned to a tank on the site plan or sketch MUST match and be identical to the tank identification number assigned to that tank on this form.

INCLUDE FACILITY NAME, OWNER'S NAME, FACILITY ADDRESS AND TELEPHONE NUMBER ON ALL SITE PLANS.

ATTACHMENT 1-1

Tank I.D. No.	TANK NO. 6001		TANK NO. 6002		TANK NO. 6003		TANK NO. 6004		TANK NO. 6005	
20. Tank and Piping Lining installed (MARK ONE X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. At purchase of tank	☑	☑	☑	☑	☐	☐	☑	☑	☑	☑
B. Retrofitted	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. Secondary containment (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Liner	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Vault	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Double wall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. None	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
E. Other, Please Specify										
22. External Type/Application of Cathodic Protection (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Wrapped	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Sprayed	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Sacrificial anode	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Impressed current	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. None	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
F. Other, Please Specify										
23. Monitoring/detection method (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Automatic sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Manual sampling	☑	☐	☑	☐	☑	☐	☑	☐	☑	☐
C. Ground water monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. System in secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. System outside backfill	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. System within piping (piping leak detector)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. None	☐	☑	☐	☑	☐	☑	☐	☑	☐	☑
24. Type of monitoring/detection system (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Continuous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Event activated	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Audio	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Visual	☑	☐	☑	☐	☑	☐	☑	☐	☑	☐
E. Electric sensor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Stock/inventory control (manual)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Stock/inventory control (electronic)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Tile drain	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Vapor sniff wells	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. Internal inspection	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
L. Other, Please Specify										
M. None	☐	☑	☐	☑	☐	☑	☐	☑	☐	☑
25. Testing history recorded (MARK ALL THAT APPLY X)										
A. Yes Upon Installation By Town	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
B. No	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Test Result (MARK IF LEAKING NOW)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. Leak/spill occurrence (MARK ALL THAT APPLY X)										
A. Within the past 1 year	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Within the past 1 to 5 years	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. More than 5 years ago	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. No Records	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

ATTACHMENT U-3

	Tank I.D. No.	TANK NO. 6001	TANK NO. 6002	TANK NO. 6003	TANK NO. 6004	TANK NO. 6005
27. Tank Status (MARK ONE X) A. Active (operational)		☒	☒	☐	☐	☐
B. Inactive (non-operational)		☐	☐	☐	☐	☐
C. Closed (temporarily out-of-service)		☐	☐	☐	☐	☐
D. Closed (permanently out-of-service)		☐	☐	☐	☐	☐
* SEE BELOW E. Abandoned, in place		☐	☐	☐	☐	☐
F. Abandoned, in place, filled only		☐	☐	☐	☐	☐
G. Abandoned, in place, sealed only		☐	☐	☐	☐	☐
* SEE BELOW H. Abandoned, in place, filled and sealed		☐	☐	☐	☐	☐
J. Seasonal		☐	☐	☐	☐	☐
K. Prior retrofitting work, Please Specify						
L. Other, Please Specify						
28. Spill recovery system on-site (MARK ONE X) A. Yes		☐	☐	☐	☐	☐
B. No		☒	☒	☒	☒	☒
29. Overfill protection (tank only) (MARK ONE X) A. Yes		☐	☐	☐	☐	☐
B. No		☒	☒	☒	☒	☒
30. Emergency shut-off mechanisms (dispensers) (MARK ONE X) A. Yes		☐	☐	☐	☐	☐
B. No		☒	☒	☒	☒	☒

* If boxes 27 E, F, G or H above have been answered - answer questions 31, 32 and 33 below.

	TANK NO. 6001	TANK NO. 6002	TANK NO. 6003	TANK NO. 6004	TANK NO. 6005
31. Substance last used in tank (MARK ONE X) A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
J. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
K. Aviation fuel	☐	☐	☐	☐	☐
L. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
M. Other, Please Specify					
32. Estimated date last used (month/year)	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.
33. Estimated quantity (gallons) left in tank					

OWNER OR OWNER'S AGENT CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

(SIGNATURE)

Mildred Piscitelli

(PRINT OR TYPE NAME)

Trustee

(TITLE)

ATTACHMENT V-4

UST NO. 025 230

11. All underground tanks used after January 1, 1974 including those taken out of operation, **(UNLESS THE TANK WAS REMOVED FROM THE GROUND)** must be included in this registration. All in-ground tanks shall be reported as underground tanks on this questionnaire regardless of their current status; Existing, E; Abandoned, A; or Closed C.

10

SPECIFIC TANK INFORMATION

OCT 06 1986

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
12. Tank Identification Number	E006	E007	E008	E009	E010
13. CASRN Number (Hazardous Substances Only)					
14. Tank Age (Years)	15	15	15	15	15
15. Tank Size (gallons)	00,000	00,000	00,000	00,000	00,500
16. Tank Contents (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☑	☑	☑	☑	☑
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
N. Other; Please Specify					
17. Tank and Piping Construction (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
B. Carbon steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
C. Stainless steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
D. Aluminum	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
E. Polyvinyl chloride	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
F. Concrete	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
G. Bronze	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
H. Earthen walls	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
J. Fiberglass reinforced plastic	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
K. Fiberglas-clad steel	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
L. Painted/asphalt steel	☑ / ☑	☑ / ☑	☑ / ☑	☑ / ☑	☑ / ☑
M. Vaulted	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
N. Composite	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
P. Iron (cast or ductile)	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
R. Non-metallic	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
S. Other; Please Specify					
18. Tank and Piping Structure (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Single wall	☑ / ☑	☑ / ☑	☑ / ☑	☑ / ☑	☑ / ☑
B. Double wall	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
C. Manway in tank	☐	☐	☐	☐	☐
19. Internal Tank and Piping Lining (MARK ONE X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Rubber	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
B. Epoxy	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
C. Alklyd	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
D. Phenolic	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
E. Glass	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
F. Clay	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐	☐ / ☐
G. None	☑ / ☑	☑ / ☑	☑ / ☑	☑ / ☑	☑ / ☑
H. Other, Please Specify					

ATTACHMENT V-5

Tank I.D. No.	TANK NO. 4004		TANK NO. 4005		TANK NO. 4003		TANK NO. 4007		TANK NO. 4004	
21. Tank and Piping Lining installed (MARK ONE X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. At purchase of tank	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
B. Retrofitted	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. Secondary containment (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Liner	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Vault	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Double wall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. None	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
E. Other, Please Specify										
23. External Type/Application of Cathodic Protection (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Wrapped	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Sprayed	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Sacrificial anode	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Impressed current	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. None	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
F. Other, Please Specify										
24. Monitoring/detection method (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Automatic sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Manual sampling	☑	☐	☑	☐	☑	☐	☑	☐	☑	☐
C. Ground water monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. System in secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. System outside backfill	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. System within piping (piping leak detector)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. None	☐	☑	☐	☑	☐	☑	☐	☑	☐	☑
24. Type of monitoring/detection system (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Continuous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Event activated	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Audio	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Visual	☑	☐	☑	☐	☑	☐	☑	☐	☑	☐
E. Electric sensor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Stock/inventory control (manual)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Stock/inventory control (electronic)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Tile drain	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Vapor sniff wells	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. Internal inspection	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
L. Other, Please Specify										
M. None	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. Testing history recorded (MARK ALL THAT APPLY X)										
A. Yes Upon Installation Only	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
B. No	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Test Result (MARK IF LEAKING NOW)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. Leak/spill occurrence (MARK ALL THAT APPLY X)										
A. Within the past 1 year	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Within the past 1 to 5 years	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. More than 5 years ago	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. No Records	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

ATTACHMENT V-6

Tank I.D. No.	TANK NO. 006	TANK NO. 007	TANK NO. 008	TANK NO. 009	TANK NO. 010
27. Tank Status (MARK ONE X)					
A. Active (operational)	☑	☑	☑	☑	☑
B. Inactive (non-operational)	☐	☐	☐	☐	☐
C. Closed (temporarily out-of-service)	☐	☐	☐	☐	☐
D. Closed (permanently out-of-service)	☐	☐	☐	☐	☐
* SEE BELOW E. Abandoned, in place	☐	☐	☐	☐	☐
F. Abandoned, in place, filled only	☐	☐	☐	☐	☐
G. Abandoned, in place, sealed only	☐	☐	☐	☐	☐
H. Abandoned, in place, filled and sealed	☐	☐	☐	☐	☐
J. Seasonal	☐	☐	☐	☐	☐
K. Prior retrofitting work, Please Specify					
L. Other, Please Specify					
* 28. Spill recovery system on-site (MARK ONE X)					
A. Yes	☐	☐	☐	☐	☐
B. No	☑	☑	☑	☑	☑
29. Overfill protection (tank only) (MARK ONE X)					
A. Yes	☐	☐	☐	☐	☐
B. No	☑	☑	☑	☑	☑
30. Emergency shut-off mechanisms (dispensers) (MARK ONE X)					
A. Yes	☐	☐	☐	☐	☐
B. No	☑	☑	☑	☑	☑

*** If boxes 27 E, F, G or H above have been answered - answer questions 31, 32 and 33 below.**

31. Substance last used in tank (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
J. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
K. Aviation fuel	☐	☐	☐	☐	☐
L. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
M. Other, Please Specify					
32. Estimated date last used (month/year)	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.
33. Estimated quantity (gallons) left in tank					

OWNER OR OWNER'S AGENT CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

ATTACHMENT V-7

(SIGNATURE)

Mildred Piscitelli

(PRINT OR TYPE NAME)

Trustee

(TITLE)

11. All underground tanks used after January 1, 1974 including those taken out of operation, **(UNLESS THE TANK WAS REMOVED FROM THE GROUND)** must be included in this registration. All in-ground tanks shall be reported as underground tanks on this questionnaire regardless of their current status; Existing, E; Abandoned, A; or Closed C.

TANKS

11-15

OCT 01 1986

SPECIFIC TANK INFORMATION

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
12. Tank Identification Number	E011	E012	E013	E014	E015
13. CASRN Number (Hazardous Substances Only)					
14. Tank Age (Years)	16	11	16	15	15
15. Tank Size (gallons)	001000	001000	000550	000600	000000
16. Tank Contents (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☑
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☑	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☑	☑	☑	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
N. Other; Please Specify					
17. Tank and Piping Construction (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Carbon steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Stainless steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Aluminum	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Polyvinyl chloride	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Concrete	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Bronze	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Earthen walls	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
J. Fiberglass reinforced plastic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
K. Fiberglas-clad steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
L. Painted/asphalt steel	☑ ☑	☑ ☑	☑ ☑	☑ ☑	☑ ☑
M. Vaulted	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
N. Composite	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
P. Iron (cast or ductile)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
R. Non-metallic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
S. Other; Please Specify					
18. Tank and Piping Structure (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Single wall	☑ ☑	☑ ☑	☑ ☑	☑ ☑	☑ ☑
B. Double wall	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Manway in tank	☐	☐	☐	☐	☐
19. Internal Tank and Piping Lining (MARK ONE X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Rubber	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Epoxy	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Alklyd	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Phenolic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Glass	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Clay	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. None	☑ ☑	☑ ☑	☑ ☑	☑ ☑	☑ ☐
H. Other, Please Specify					

ATTACHMENT V-C

Tank I.D. No.	TANK NO. 6d11		TANK NO. 6d12		TANK NO. 6d13		TANK NO. 6d14		TANK NO. 6d15	
20. Tank and Piping Lining installed (MARK ONE X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. At purchase of tank	☑	☑	☑	☑	☑	☐	☑	☑	☑	☑
B. Retrofitted	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. Secondary containment (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Liner	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Vault	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Double wall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. None	☑	☑	☑	☑	☑	☑	☑	☐	☑	☑
E. Other, Please Specify										
22. External Type/Application of Cathodic Protection (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Wrapped	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Sprayed	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Sacrificial anode	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Impressed current	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. None	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
F. Other, Please Specify										
23. Monitoring/detection method (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Automatic sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Manual sampling	☑	☐	☑	☐	☑	☐	☑	☐	☑	☐
C. Ground water monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. System in secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. System outside backfill	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. System within piping (piping leak detector)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
24. Type of monitoring/detection system (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Continuous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Event activated	☐	☐	☐	☐	☐	☐	☑	☐	☑	☐
C. Audio	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Visual	☑	☐	☑	☐	☑	☐	☐	☐	☐	☐
E. Electric sensor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Stock/inventory control (manual)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Stock/inventory control (electronic)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Tile drain	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Vapor sniff wells	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. Internal inspection	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
L. Other, Please Specify										
M. None	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. Testing history recorded (MARK ALL THAT APPLY X)										
A. Yes upon installation only	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐
B. No	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Test Result (MARK IF LEAKING NOW)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. Leak/spill occurrence (MARK ALL THAT APPLY X)										
A. Within the past 1 year	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Within the past 1 to 5 years	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. More than 5 years ago	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. No Records	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

ATTACHMENT V-9

	Tank I.D. No.	TANK NO. E011	TANK NO. E012	TANK NO. E013	TANK NO. E014	TANK NO. E015
27. Tank Status (MARK ONE X) A. Active (operational)		☑	☑	☑	☑	☑
B. Inactive (non-operational)		☐	☐	☐	☐	☐
C. Closed (temporarily out-of-service)		☐	☐	☐	☐	☐
D. Closed (permanently out-of-service)		☐	☐	☐	☐	☐
* SEE BELOW E. Abandoned, in place		☐	☐	☐	☐	☐
F. Abandoned, in place, filled only		☐	☐	☐	☐	☐
G. Abandoned, in place, sealed only		☐	☐	☐	☐	☐
H. Abandoned, in place, filled and sealed		☐	☐	☐	☐	☐
J. Seasonal		☐	☐	☐	☐	☐
K. Prior retrofitting work, Please Specify						
L. Other, Please Specify						
28. Spill recovery system on-site (MARK ONE X) A. Yes		☐	☐	☐	☐	☐
B. No		☑	☑	☑	☑	☑
29. Overfill protection (tank only) (MARK ONE X) A. Yes		☐	☐	☐	☐	☐
B. No		☑	☑	☑	☑	☑
30. Emergency shut-off mechanisms (dispensers) (MARK ONE X) A. Yes		☐	☐	☐	☑	☑
B. No		☑	☑	☑	☐	☐

* If boxes 27 E, F, G or H above have been answered - answer questions 31, 32 and 33 below.

31. Substance last used in tank (MARK ONE X) A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
J. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
K. Aviation fuel	☐	☐	☐	☐	☐
L. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
M. Other, Please Specify					
32. Estimated date last used (month/year)	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.
33. Estimated quantity (gallons) left in tank					

ATTACHMENT V-10

OWNER OR OWNER'S AGENT CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

(SIGNATURE)

Mildred Piscitelli
(PRINT OR TYPE NAME)

Trustee
(TITLE)

REMOVED FROM THE GROUND) must be included in this registration. All in-ground tanks shall be reported as underground tanks on this questionnaire regardless of their current status; Existing, E; Abandoned, A; or Closed C.

SPECIFIC TANK INFORMATION

OCT 02 1986

TANKS 16-20

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
12. Tank Identification Number	ED16	ED17	ED18	ED19	ED20
13. CASRN Number (Hazardous Substances Only)					
14. Tank Age (Years)	15	11	02	21	
15. Tank Size (gallons)	20,000	06000	00400	3000	03000
16. Tank Contents (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☑	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☑	☑	☐	☐	☑
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
N. Other; Please Specify			Hydraulic oil		
17. Tank and Piping Construction (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Carbon steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Stainless steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Aluminum	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Polyvinyl chloride	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Concrete	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Bronze	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Earthen walls	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
J. Fiberglass reinforced plastic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
K. Fiberglas-clad steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
L. Painted/asphalt steel	☑ ☑	☑ ☑	☑ ☑	☑ ☑	☑ ☑
M. Vaulted	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
N. Composite	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
P. Iron (cast or ductile)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
R. Non-metallic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
S. Other; Please Specify					
18. Tank and Piping Structure (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Single wall	☑ ☑	☑ ☑	☑ ☑	☑ ☑	☑ ☑
B. Double wall	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Manway in tank	☐	☐	☐	☐	☐
Internal Tank and Piping Lining (MARK ONE X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Rubber	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Epoxy	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Alklyd	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Phenolic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Glass	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Clay	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. None	☑ ☑	☑ ☑	☑ ☑	☑ ☑	☑ ☑
H. Other, Please Specify					

ATTACHMENT V-11

Tank I.D. No.	TANK NO. 4d/e		TANK NO. 4d/d		TANK NO. 4d/c		TANK NO. 4d/b		TANK NO. 4d/a	
20. Tank and Piping Lining installed (MARK ONE X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. At purchase of tank	☑	☑	☑	☑	☑	☑	☑	☑	☐	☑
B. Retrofitted	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. Secondary containment (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Liner	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Vault	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Double wall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. None	☑	☑	☑	☑	☑	☑	☐	☑	☐	☑
E. Other, Please Specify										
22. External Type/Application of Cathodic Protection (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Wrapped	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Sprayed	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Sacrificial anode	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Impressed current	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. None	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
F. Other, Please Specify										
23. Monitoring/detection method (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Automatic sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Manual sampling	☑	☑	☑	☐	☑	☐	☑	☐	☑	☐
C. Ground water monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. System in secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. System outside backfill	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. System within piping (piping leak detector)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
24. Type of monitoring/detection system (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Continuous	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐
B. Event activated	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
C. Audio	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
D. Visual	☑	☐	☑	☐	☑	☐	☑	☐	☑	☐
E. Electric sensor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Stock/inventory control (manual)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Stock/inventory control (electronic)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Tile drain	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Vapor sniff wells	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. Internal inspection	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
L. Other, Please Specify										
M. None	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. Testing history recorded (MARK ALL THAT APPLY X)										
A. Yes upon Install/Intrm only	☑	☐	☑	☑	☑	☑	☑	☑	☑	☑
B. No	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Test Result (MARK IF LEAKING NOW)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. Leak/spill occurrence (MARK ALL THAT APPLY X)										
A. Within the past 1 year	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Within the past 1 to 5 years	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. More than 5 years ago	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. No Records	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

ATTACHMENT V-12

Tank I.D. No.	TANK NO. 6016	TANK NO. 6017	TANK NO. 6018	TANK NO. 6019	TANK NO. 6020
27. Tank Status (MARK ONE X) A. Active (operational)	☑	☑	☑	☑	☑
B. Inactive (non-operational)	☐	☐	☐	☐	☐
C. Closed (temporarily out-of-service)	☐	☐	☐	☐	☐
D. Closed (permanently out-of-service)	☐	☐	☐	☐	☐
SEE BELOW E. Abandoned, in place	☐	☐	☐	☐	☐
F. Abandoned, in place, filled only	☐	☐	☐	☐	☐
G. Abandoned, in place, sealed only	☐	☐	☐	☐	☐
H. Abandoned, in place, filled and sealed	☐	☐	☐	☐	☐
J. Seasonal	☐	☐	☐	☐	☐
K. Prior retrofitting work, Please Specify					
L. Other, Please Specify					
28. Spill recovery system on-site (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☑	☑	☑	☑	☑
29. Overfill protection (tank only) (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☑	☑	☑	☑	☑
30. Emergency shut-off mechanisms (dispensers) (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☑	☑	☑	☑	☑

*** If boxes 27 E, F, G or H above have been answered - answer questions 31, 32 and 33 below.**

31. Substance last used in tank (MARK ONE X) A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
J. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
K. Aviation fuel	☐	☐	☐	☐	☐
L. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
M. Other, Please Specify					
32. Estimated date last used (month/year)	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.
33. Estimated quantity (gallons) left in tank					

OWNER OR OWNER'S AGENT CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

ATTACHMENT V-13

(SIGNATURE)

Mildred Piscitelli

(PRINT OR TYPE NAME)

Trustee

(TITLE)

11. All underground tanks used after January 1, 1974 including those taken out of operation, **(UNLESS THE TANK WAS REMOVED FROM THE GROUND)** must be included in this registration. All in-ground tanks shall be reported as underground tanks on this questionnaire regardless of their current status; Existing, E; Abandoned, A; or Closed C.

SPECIFIC TANK INFORMATION

OCT 01 1986

TANKS 21

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
12. Tank Identification Number	001	002			
13. CASRN Number (Hazardous Substances Only)					
14. Tank Age (Years)					
15. Tank Size (gallons)	03000				
16. Tank Contents (MARK ONE X)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☑	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
N. Other; Please Specify					
17. Tank and Piping Construction (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Carbon steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Stainless steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Aluminum	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Polyvinyl chloride	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Concrete	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Bronze	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Earthen walls	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
J. Fiberglass reinforced plastic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
K. Fiberglas-clad steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
L. Painted/asphalt steel	☑ ☑	☐ ☐	☐ ☐	☐ ☐	☐ ☐
M. Vaulted	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
N. Composite	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
P. Iron (cast or ductile)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
R. Non-metallic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
S. Other; Please Specify					
18. Tank and Piping Structure (MARK ALL THAT APPLY X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Single wall	☑ ☑	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Double wall	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Manway in tank	☐	☐	☐	☐	☐
Internal Tank and Piping Lining (MARK ONE X)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Rubber	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Epoxy	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Alklyd	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Phenolic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Glass	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Clay	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. None	☑ ☑	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Other, Please Specify					

ATTACHMENT V-14

	TANK NO.		TANK NO.		TANK NO.		TANK NO.		TANK NO.	
Tank I.D. No.	001									
20. Tank and Piping lining installed (MARK ONE X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. At purchase of tank	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
B. Retrofitted	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. Secondary containment (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Liner	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Vault	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Double wall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. None	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
E. Other, Please Specify										
22. External Type/Application of Cathodic Protection (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Wrapped	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Sprayed	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Sacrificial anode	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Impressed current	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. None	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
F. Other, Please Specify										
23. Monitoring/detection method (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Automatic sampling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Manual sampling	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Ground water monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. System in secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. System outside backfill	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. System within piping (piping leak detector)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. None	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐
24. Type of monitoring/detection system (MARK ALL THAT APPLY X)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
A. Continuous	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Event activated	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Audio	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. Visual	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
E. Electric sensor	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Stock/inventory control (manual)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Stock/inventory control (electronic)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Tile drain	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Vapor sniff wells	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
K. Internal inspection	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
L. Other, Please Specify										
M. None	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐
25. Testing history recorded (MARK ALL THAT APPLY X)										
A. Yes upon installation of tank	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
B. No	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. Test Result (MARK IF LEAKING NOW)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. Leak/spill occurrence (MARK ALL THAT APPLY X)										
A. Within the past 1 year	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B. Within the past 1 to 5 years	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C. More than 5 years ago	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
D. No Records	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐

ATTACHMENT V-15

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
Tank I.D. No.	002A				
27. Tank Status (MARK ONE X) A. Active (operational)	☒	☐	☐	☐	☐
B. Inactive (non-operational)	☐	☐	☐	☐	☐
C. Closed (temporarily out-of-service)	☐	☐	☐	☐	☐
D. Closed (permanently out-of-service)	☐	☐	☐	☐	☐
E. Abandoned, in place	☐	☐	☐	☐	☐
F. Abandoned, in place, filled only	☐	☐	☐	☐	☐
G. Abandoned, in place, sealed only	☐	☐	☐	☐	☐
H. Abandoned, in place, filled and sealed	☐	☐	☐	☐	☐
J. Seasonal	☐	☐	☐	☐	☐
K. Prior retrofitting work, Please Specify					
L. Other, Please Specify					
28. Spill recovery system on-site (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☒	☐	☐	☐	☐
29. Overfill protection (tank only) (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☒	☐	☐	☐	☐
30. Emergency shut-off mechanisms (dispensers) (MARK ONE X) A. Yes	☐	☐	☐	☐	☐
B. No	☒	☐	☐	☐	☐

If boxes 27 E, F, G or H above have been answered - answer questions 31, 32 and 33 below.

31. Substance last used in tank (MARK ONE X) A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol enriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
J. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
K. Aviation fuel	☐	☐	☐	☐	☐
L. Hazardous substances (per Fact Sheet)	☐	☐	☐	☐	☐
M. Other, Please Specify					
32. Estimated date last used (month/year)	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.	Mo. Yr.
33. Estimated quantity (gallons) left in tank					

ATTACHMENT V-16

OWNER OR OWNER'S AGENT CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

(SIGNATURE)

Mildred Piscitelli

(PRINT OR TYPE NAME)

Trustee

(TITLE)

ATTACHMENT W

GEOLOGY AND GROUND-WATER RESOURCES OF UNION COUNTY, NEW JERSEY

By Bronius Nemickas

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations 76–73

Prepared in cooperation with
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES

June 1976

ATTACHMENT W-1

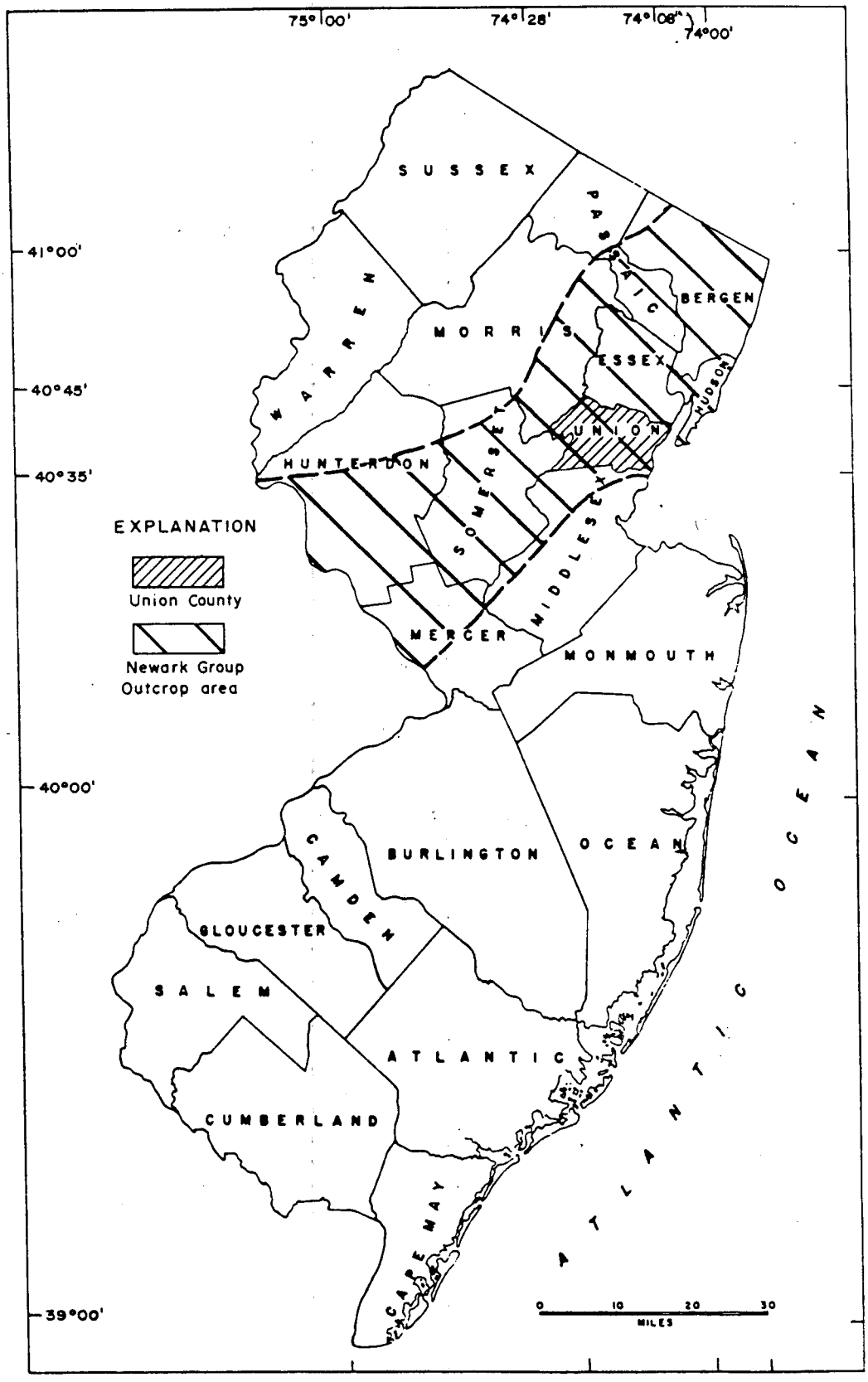


FIGURE 1.--LOCATION OF UNION COUNTY AND OUTCROP AREA OF THE NEWARK GROUP.

ATTACHMENT W-2

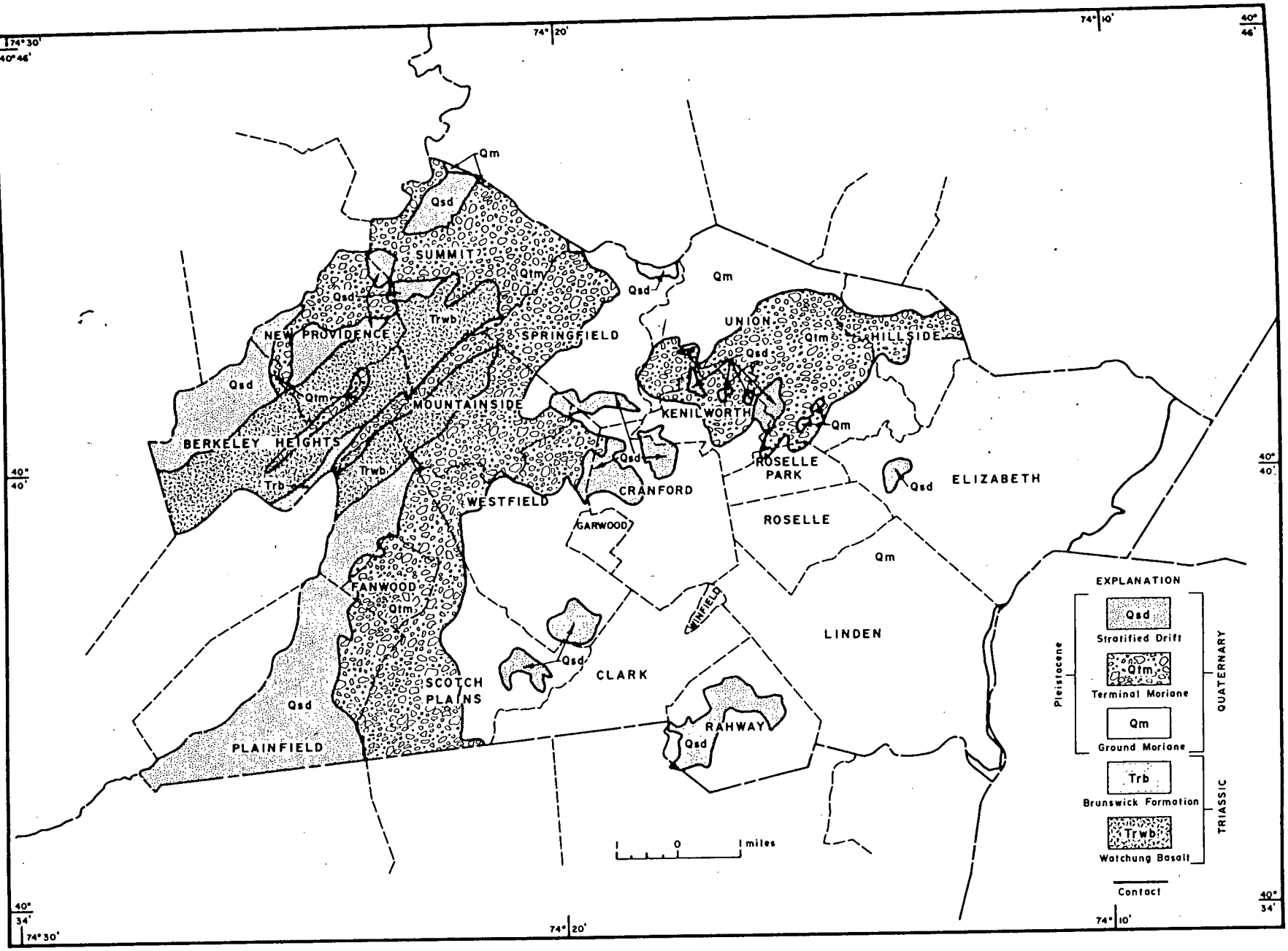


FIGURE 3.--GENERALIZED SURFICIAL GEOLOGIC MAP OF UNION COUNTY, NEW JERSEY.

ATTACHMENT W-3

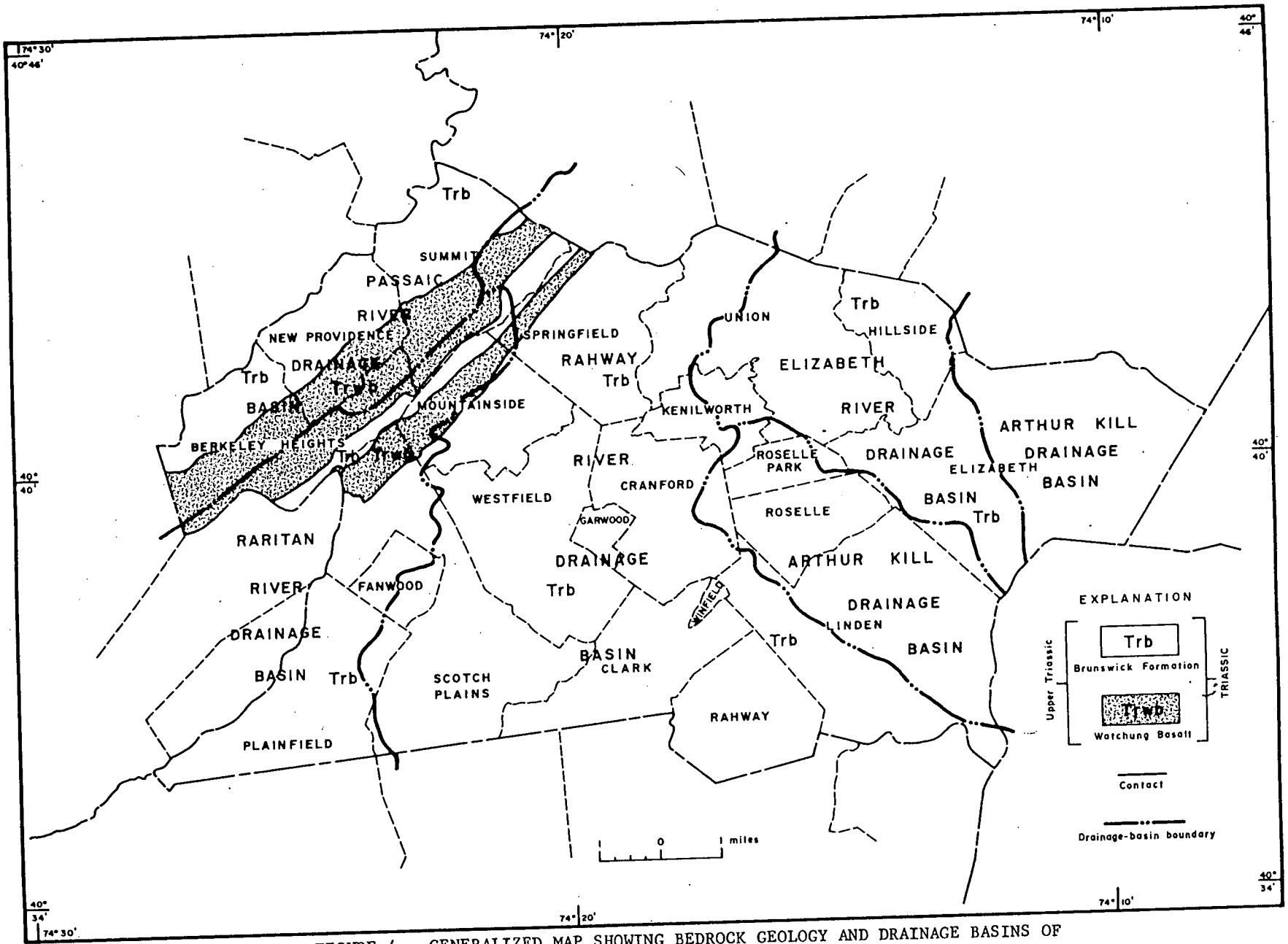


FIGURE 4.--GENERALIZED MAP SHOWING BEDROCK GEOLOGY AND DRAINAGE BASINS OF UNION COUNTY, NEW JERSEY.

ATTACHMENT W-4

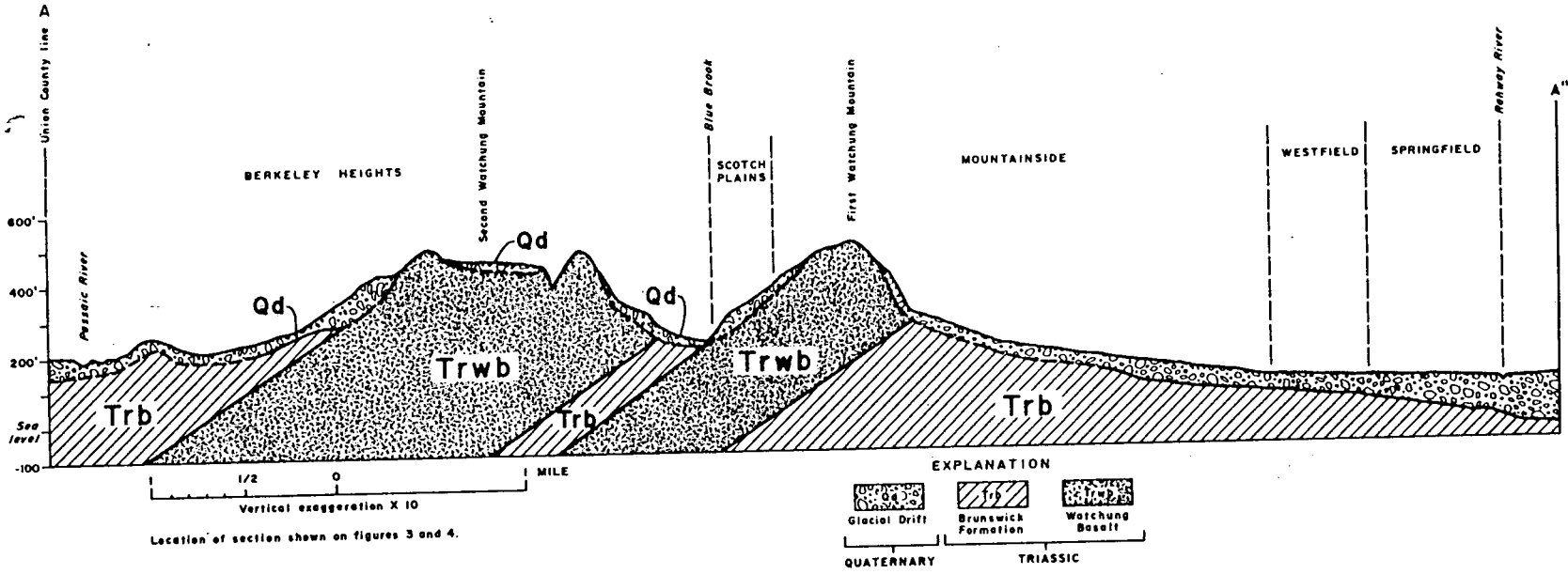


FIGURE 5.--GENERALIZED GEOLOGIC SECTION ACROSS UNION COUNTY, NEW JERSEY.

ATTACHMENT W-5

The Brunswick Formation consists of thin-bedded shales, mudstones, and sandstones which range in color from reddish-brown to gray. The reddish-brown color originates from reworked hematite which comprises 5 to 10 percent of the formation (Boch, 1959). The minerals of the Brunswick Formation include quartz, illite, muscovite, feldspar, and small amounts of calcite and gypsum. Primary structures such as ripple marks and mud cracks indicate that the Brunswick Formation was deposited in a shallow-water environment.

The regional strike of the Brunswick Formation in Union County is N50°E with dips 9° to 13°NW. The major joint sets strike approximately N45°E and N75°W and both sets have a vertical dip. The thickness of the formation is 6,000 to 8,000 feet.

The Watchung Basalt consists of three extensive basaltic lava sheets that are intercalated with the sedimentary rocks of the Brunswick Formation. The basalt flows are more resistant to erosion than the shales, mudstones, and sandstones and form prominent ridges. Two of the three lava sheets occur in Union County and form the First and Second Watchung Mountains. The third sheet forms a discontinuous ridge known as Long Hill and Hook Mountain in Morris County to the west of Union County.

The basalt flows are volcanic extrusive rocks which were formed by the outflow of lava onto the land surface. Rapid cooling of the flows produced a dense, aphanitic rock. Phenocrysts are present in the ground mass which give the basalt a porphyritic texture. The phenocrysts are usually augite and in some cases feldspar. The ground mass for the most part consists of augite and feldspar.

The basalt sheets vary in thickness from less than 300 feet in parts of the Long Hill flow to a maximum of about 1,200 feet in parts of the Second Watchung Mountain. The Second Watchung Mountain is a double flow sheet separated by a thin section of the Brunswick Formation. The thickest flow sheet is the upper flow of the Second Watchung Mountain which has a maximum thickness of about 800 feet.

Quaternary Deposits

Unconsolidated sediments deposited by glaciers or by glacial meltwater during the Pleistocene Epoch mantle the bedrock surface in Union County. These deposits consist of clay, silt, sand, gravel, and boulders. They are glacial, glaciolacustrine (deposited by glacial meltwater in lakes), or glacial fluvial (deposited by glacial meltwater in streams) in origin.

The Pleistocene sediments fall into three general classes: (1) end moraine--a moraine jointed across the course of a glacier at its farthest advance; (2) ground moraine--the material carried forward in and beneath the ice and finally deposited from its under surface; and (3) stratified

drift--deposits from glacial meltwater exhibiting both sorting and stratification. The stratified drift includes lacustrine (deposited in lakes) and fluviatile (deposited in streams) sands and clays.

Figure 3 is a surficial geologic map of Union County showing the extent of the end moraine, ground moraine, and stratified drift. West of the end moraine near Scotch Plains and Plainfield, stratified drift forms an outwash plain (fig. 3).

Before the last glaciation the rivers draining Union County cut deep valleys into the Brunswick Formation (fig. 2). Subsequently the valleys were filled and buried by glacial material. The thickness of the glacial deposits is controlled largely by the underlying bedrock topography. Figure 6 consists of three sections showing the altitudes of the bedrock valley floor and thickness of Pleistocene deposits in the bedrock valleys. These buried channels underlie parts of Hillside, Union, Springfield, Clark, and Scotch Plains Townships, and the Boroughs of Mountainside, New Providence and Kenilworth and the Cities of Summit and Rahway.

The Pleistocene sediments in the bedrock channels consist of unstratified and stratified clay, silt, sand, and gravel. Only the sand and gravel deposits of the stratified drift will yield large quantities of water to wells.

Deposits of Holocene (Recent) age cover only small areas and include river alluvium, and eolian deposits.

The stratigraphic units in Union County and their geologic and hydrologic characteristics are given in Table 1. Table 6 contains representative well logs indicating the variations in the lithologies of the geologic units.

GROUND WATER HYDROLOGY

Introduction

Water is continually being exchanged in a circulatory pattern between the earth and the atmosphere. In general, the amount of precipitation ultimately determines the amount of water available for man's use. Some of the precipitation that falls on land evaporates where it falls, some is absorbed by plants that later transpire the water back to the atmosphere, some flows overland to streams, and some infiltrates into the ground to become ground water. The ground water is discharged to streams, and streams flow to the oceans where the water can be evaporated back to the atmosphere.

TABLE 1.—STRATIGRAPHIC UNITS IN THE RAHWAY AREA AND THEIR GEOLOGIC AND HYDROLOGIC CHARACTERISTICS

Period	Epoch	Unit	Geologic characteristics	Hydrologic characteristics
Quaternary	Recent	Alluvium	Muds and sands deposited in river channels and estuaries; 0 to 50 feet thick.	Muds are relatively impermeable and serve to retard seepage between rivers and the ground-water reservoir, and most important, to retard flow of saline water through river beds.
		Eolian deposits	Sand, white, forming dunes along the Arthur Kill. Less than 10 feet thick.	Deposits lie above water table but transmit water readily to underlying sediments because of high infiltration capacity and permeability.
	Pleistocene	Till	Clay, sand, and gravel, reddish-brown, unstratified, and unsorted. Forms most of the surficial ground and terminal moraine deposits; 0-100 feet thick. Deposited directly by glacier.	Not an important source of ground water because of low permeability and small thickness which lies below the water table. Yields water to dug domestic wells.
		Stratified drift	Sand and gravel, sorted and stratified, occurring as fill in bedrock channels and interbedded with till in the terminal moraine; 0-50 feet thick. Deposited by water.	Important as an aquifer only in the city of Rahway where wells tap both the Brunswick Shale and stratified drift and induce recharge from the Rahway River. Average well yield 370 gpm. Quality of water is good.
		Pensauken Formation	Sand and gravel; chiefly quartz. Some pebbles and cobbles of shale, sandstone, quartz and crystalline rocks.	Yields no water to wells.
		Unconformity		
Cretaceous	Late Cretaceous	Raritan Formation: Sayreville Sand Member	Sand, fine to coarse, white, micaceous; contains clay and arkosic sand beds. Locally crossbedded. 0-40 feet thick.	Not an important source of water north of the Raritan River as much of it lies above the water table. At Sayreville, N. J. the specific yield ranges from 32 to 39 percent and the coefficient of permeability ranges from 30 to 500 gpd per sq. ft.
		Raritan Formation: Woodbridge clay	Upperbeds — clay, black lignitic; contains siderite, pyrite, and interbedded sand lenses. Lowerbeds - clay, varicolored and locally sandy. Total thickness 0-60 feet.	Confining bed.
		Raritan Formation: Farrington Sand Member	Sand, fine to very coarse, light colored; contains interbedded arkosic sand and clay. 0-80 feet thick.	Yields moderate amounts of good quality water. Average transmissibility 10,000 gpd per ft. Average well yield is 96 gpm. Salt water encountered in wells adjacent to the coast. Permeabilities at Parlin, N. J. range from 210 to 3,500 gpd per sq. ft. Specific yield ranges from 25 to 36 percent.
		Raritan Formation: Raritan fire clay	Clay, varicolored blue, brown, gray, or red. Reddish-brown at basal contact with Brunswick Shale. 2-35 feet thick.	Confining bed.
		Unconformity		
Triassic	Late Triassic	Newark Group: Igneous intrusive	Buried diabase sill in southeastern part of report area that forms Palisades where it crops out on Staten Island.	Dense and relatively impermeable. No wells tap the sill.
		Newark Group: Brunswick Shale	Shale, reddish-brown, fractured; contains interbedded sandstone. Underlies glacial drift and Raritan Formation in the Rahway area. Altered to hornfels adjacent to diabase. 6,000 to 9,000 feet thick. Strikes N. 50° E. Dips 9-12° NW.	Most intensely developed aquifer in area. Yields small to moderate quantities of water from primary openings in sandstone and from secondary openings which decrease with depth in shale and sandstone. Water locally high in sulfate, total dissolved solids, and hardness. Both water table and artesian conditions exist. Interference is greatest between wells aligned along strike of formation. Average transmissibility 16,000 gpd per ft. Yield range 2 to 660 gpm. Average yield 75 gpm. Saline water encountered at depth (800 ft) and adjacent to the coast.

ATTACHMENT W-8

ATTACHMENT X

Form DWH-143
7/81

NEW JERSEY DEPART[illegible] OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
ENFORCEMENT & REGULATORY SERVICES

7/10/91
JS

COMPLIANCE EVALUATION INSPECTION
PUBLIC COMMUNITY WATER SUPPLY

DATE MARCH 25,26,27, 1991

GENERAL INFORMATION

PURVEYOR/ FACILITY: ELIZABETHTOWN WATER COMPANY

FILE LOCATION: PLAINFIELD / UNION COUNTY — PW-ID # 2004002

MAILING ADDRESS: 1341 NORTH AVENUE, PLAINFIELD

ADMIN.: MR. RICHARD SADOWSKI — REQUIRED LICENSES T-2 W-4

BUSINESS TELEPHONE # Admin.: 654-1234 Licensed Operators: T-2 W-4

FACILITY DESCRIPTION

SOURCES: descriptions, locations, capacities(mgd): SEE ATTACHMENTS A+E

Est Tot Eff Cap: 12.4 MGD

TREATMENT: source, type, capacities(mgd): SEE ATTACHMENT A

Est Tot Eff Cap: 12.4 MGD

FINISHED WATER STORAGE: descriptions, locations, capacities(mg): SEE ATTACHMENT B

Est Tot Cap: 50.2 MG

EMERGENCY INTERCONNECTIONS: descriptions, available gallonage(mgd): SEE ATTACHMENT C

Est Tot Avail: 67 MGD

AUXILIARY POWER: location, type, capabilities: METRO REGION BOOSTER STATIONS: ROSELLE EAST (3 PUMPS), ROSELLE WEST (4 PUMPS), NETHERWOOD (3 PUMPS), GLENSIDE (3 PUMPS), JERUSALEM ROAD (4 PUMPS), MOUNTAINSIDE (2 PUMPS), LOCKHEED (2 PUMPS), SPRINGFIELD (2 PUMPS), HUMMOCKS (5 PUMPS)

ATTACHMENT F-1

NJDEP - DIVISION OF WATER RESOURCES
PUBLIC COMMUNITY WATER SUPPLY INSPECTION

COMPLIANCE EVALUATION (Continued)

STORAGE AND/OR DISTRIBUTION DEFICIENCIES SEE LETTER AND APPENDIX III

LICENSING, MONITORING AND/OR REPORTING DEFICIENCIES NONE

COMPLIANCE SAMPLING VIOLATIONS:

LOCATION	DATA SOURCE	PARAM	MAX CONTMNT LEVEL	RESULT	LOCATION	DATA SOURCE	PARAM	MAX CONTMNT LEVEL	RESULT

OVERALL COMPLIANCE RATING:

☐ ACCEPTABLE ☑ CONDITIONALLY ACCEPTABLE ☐ UNACCEPTABLE

NOTICE: YOU ARE REQUIRED TO INFORM THE N.J.D.E.P. IN WRITING OF YOUR ACTUAL OR INTENDED ACTIONS TO COMPLY WITH N.J.S.A. 58:12A-1 ET SEQ. VIA IMPLEMENTATION OF REMEDIAL MEASURES TO CORRECT THE DEFICIENCIES LISTED IN THIS REPORT. FAILURE TO ADEQUATELY RESPOND IN A TIMELY FASHION WILL RENDER YOU LIABLE FOR PENALTIES OF UP TO $5,000.00 FOR EACH VIOLATION, PURSUANT TO N.J.A.C. 7:10-3.

INSPECTOR: Rodger E. Fedak
Signature

RODGER E. FEDAK
Name

SENIOR ENVIRONMENTAL SPECIALIST
Title

METRO
Region

PERSON INTERVIEWED: RICHARD SADOWSKI
Name

ASSISTANT SUPERINTENDENT
Title

ELIZABETHTOWN WATER CO.
Organization

ATTACHMENT 1-2

ELIZABETHTOWN WATER COMPANY - ATTACHMENT A

WELLS LOCATED IN ESSEX AND UNION COUNTIES

WELL REFERENCE NUMBER	WELL	TOWN	WELL STATUS
1	Elks Well	Clark	Out of Service
2	Quinton Avenue	Kenilworth	Out of Service
3	Richfield Avenue		Out of Service
4	Bristol Road	Mountainside	Out of Service
5	Central Avenue		Out of Service
6	Charles Street #1		In Service
7	Charles Street #2		In Service
8	Netherwood #1	Plainfield	Out of Service
9	Netherwood #2		In Service
10	Netherwood #3		Out of Service
11	Netherwood #4		In Service
12	Netherwood #5		Out of Service
13	Netherwood #6		In Service
14	Netherwood #7		Out of Service
15	Netherwood #8		In Service
16	Netherwood #9		Out of Service
17	Netherwood #10		In Service
18	Netherwood #11		In Service
19	Netherwood #12		In Service
20	City of Plainfield		Out of Service
21	Fifth Street		In Service
22	George Street		Out of Service
23	Prospect Avenue		Out of Service
24	Watchung Avenue		Out of Service
25	Walburga #1	Roselle	Out of Service
26	Walburga #2		Out of Service
27	Walburga #3		Out of Service
28	Walburga #4		Out of Service
29	Chandler Avenue		Out of Service
30	First Avenue		Out of Service
31	Aberdeen Road	Scotch Plains	Out of Service
32	Glenside Avenue		Out of Service
33	Jerusalem Road #1		Out of Service
34	Jerusalem Road #2		Out of Service
35	Jerusalem Road #3		Out of Service
36	Morse Avenue		Out of Service
37	Elm Street	Westfield	Out of Service
38	Prospect Street		Out of Service
39	Westfield Office #1		Out of Service
40	Westfield Office #2		Out of Service
41	Wittke #1		Out of Service
42	Wittke #2		Out of Service

ATTACHMENT 4-3

ELIZABETHTOWN WATER COMPANY - ATTACHMENT B

FINISHED WATER STORAGE

TOWN	LOCATION	STORAGE FACILITY	CAPACITY
Kenilworth	Michigan Avenue	Standpipe	2.0 MG
Mountainside	Coles Avenue	Standpipe	0.2 MG
Mountainside	Prospect Street	Standpipe	0.5 MG
Plainfield	Netherwood Wellfield	Reservoir	0.5 MG
Plainfield	Netherwood Wellfield	Reservoir	1.0 MG
Scotch Plains	Jerusalem Road	Reservoir	12.5 MG
Scotch Plains	Jerusalem Road	Standpipe	1.5 MG
Springfield	Springfield Station	Reservoir	1.0 MG
Union	Hummocks Wellfield	Reservoir	1.0 MG
Union	Hummocks Wellfield	Tank	5.0 MG
Union	Hummocks Wellfield	Watersphere	25.0 MG

TOTAL SYSTEM STORAGE CAPACITY IN UNION COUNTY = 50.2 MG

ATTACHMENT 4-4

ELIZABETHTOWN WATER COMPANY - ATTACHMENT D

POTABLE WATER PURCHASED AND MUNICIPALITIES SERVED

Potable Water Purchased: 1989

Commonwealth Water Company (New Jersey American)

City of Elizabeth

City of Newark

Municipalities Served	Connections	Population
1. Clark	4,894	14,682
2. Cranford	7,575	22,725
3. Fanwood	2,543	7,629
4. Garwood	1,534	4,602
5. Kenilworth	3,036	9,108
6. Linden	11,363	34,089
7. Mountainside	2,530	7,590
8. Plainfield	10,499	31,497
9. Roselle	5,368	16,104
10. Roselle Park	3,451	10,353
11. Scotch Plains	6,892	20,676
12. Union	16,466	49,398
13. Westfield	9,726	29,178
14. Elizabeth	0	0
15. Hillside	5,997	17,991
16. Rahway	0	0
17. Springfield	0	0
TOTAL FOR YEAR ENDING 1989 =	91,874	275,622

ATTACHMENT A-5

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
METRO BUREAU OF REGIONAL ENFORCEMENT
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY 07052

(201) 669-3900

June 14, 1991

JUN 18 1991

Mr. Richard Sadowski
Assistant Superintendent of Wells and Stations
Elizabethtown Water Company
1341 North Avenue
Plainfield, NJ 07062

Re: Compliance Evaluation Inspection
Elizabethtown Water Company
P.W. ID No.: 2004002
Plainfield/Union County

Dear Mr. Sadowski:

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on March 25, 26 and 27, 1991. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "CONDITIONALLY ACCEPTABLE" due to the following deficiencies:

1. During the inspection numerous well deficiencies were observed. Appendix I lists the well deficiencies. Across the top are numbers which correspond to the Well Reference Numbers listed on Attachment A. Along the left margin are the requirements for the wells. A "NO" response indicates where a well was found to be deficient.

2. Appendix II lists pump station and treatment plant deficiencies observed during the inspection.

3. Appendix III lists storage deficiencies observed during the inspection.

NOTE: While many of the deficiencies noted above are the result of regulatory changes enacted after the construction of the facilities, a primary objective of these regulations is to ensure that the potable water facilities are maintained in a safe manner which will provide optimum water quality and, therefore, these deficiencies should be corrected.

ATTACHMENT X-6

Form DWR-143
7/81

DIVISION OF WATER RESOURCES
ENFORCEMENT & REGULATORY SERVICES

COMPLIANCE EVALUATION INSPECTION
PUBLIC COMMUNITY WATER SUPPLY

DATE June 19+20, 1991

GENERAL INFORMATION

PURVEYOR/ FACILITY: ELIZABETHTOWN WATER COMPANY

FILE LOCATION: PLAINFIELD, UNION COUNTY (SOMERSET) | PW-ID #: 2004002

MAILING ADDRESS: 1341 NORTH AVENUE, PLAINFIELD, NJ. 07061

ADMIN.: NORBERT WAGNER, VICE PRES. OPERATIONS | REQUIRED LICENSES: T-4 W-4

BUSINESS TELEPHONE # Admin.: 654-1234 - Licensed Operators: T-4 ED MULLEN W-4 FRED YOERG

FACILITY DESCRIPTION

SOURCES: descriptions, locations, capacities(mgd): SURFACE WATER RARITAN RIVER. MILLSTONE RIVER USED AS BACKUP ALSO DELAWARE AND RARITAN CANAL 10-15 million Gallons per Day. 26 WELLS IN HUNTERDON AND SOMERSET COUNTY Est Tot Eff Cap: APPENDIX 1

TREATMENT: source, type, capacities(mgd): ALL POTABLE WELLS HAVE HYPOCHLORINATION. SURFACE WATER SUPPLY HAS SCREENING, ADDITION OF ALUM POLYMER FOR COAGULATION, POTASSIUM PERMANGANATE AND POWDERED ACTIVATED CARBON FOR TASTE AND ODOR CONTROL, CAUSTIC SODA AND SULPHURIC ACID Est Tot Eff Cap: FOR PH ADJUSTMENT, COAGULATION, FLOCCULATION, SEDIMENTATION BASINS. 36 MULTI-MEDIA FILTERS.

FINISHED WATER STORAGE: descriptions, locations, capacities(mg): See ATTACHED APPENDIX #2

Est Tot Cap:

EMERGENCY INTERCONNECTIONS: descriptions, available gallonage(mgd): See attached APPENDIX #3

Est Tot Avail:

AUXILIARY POWER: location, type, capabilities: APPENDIX #4

ATTACHMENT K-7

PUBLIC COMMUNITY WATER SUPPLY INSPECTION

DELIVERY INFORMATION

PLANT DELIVERED WATER (mgd,month,year) Max JULY 90 133. MGD Min FEB 91 115.5MGD Annual Average 125.MGD

BULK PURCHASES (provider,mgd) See LIST ATTACHED

BULK SALES (customer, mgd) See ATTACHED LIST

NUMBER OF SERVICES SEE LIST % METERED 100%

MUNICIPALITIES SERVED (est. services in each) See LIST APPENDIX 5

TOTAL ESTIMATED POPULATION SERVICED 502,493

CURRENT/RECENT WATER RESTRICTIONS NONE

NEW CONSTRUCTION (Project Numbers) NONE

DISTRIBUTION MAINS: Sizing 4" (min) to 60" (max)
Pressures 60PSI (min) to 120PSI (max)
Hydrants/Flushing Program See ATTACHED

MONITORING & REPORTING

PARAMETER(S)	FREQUENCY REQUIRED	FREQUENCY PERFORMED
SODIUM	YEARLY	2/90 2/91
Coliform	240 MONTH	300 MONTH OKTHRU 5/91
Inorganics	YEARLY	2/90 2/91
Nitrate	"	" "
Trihalomethanes	QUARTERLY	1,2,8,11 85/90/2/91
Organics	3YRS	7/85 7/90
Turbidity	DAILY	DAILY
SECONDARIES	YEARLY	2/90 2/91
A-280	2YR	5/85 11/85 5/90 11/90 5/91
RADIOLOGICAL	4YRS	Due 91

NAME OF LABORATORY ACCUTEST LABS CERTIFICATION # 12129

ADDRESS 2235 ROUTE 130 SOUTH, BLDG B, DAYTON, N.J. 08810 | 18024

ELIZABETHTOWN WATER COMPANY P.O. BOX 182 ✓
BOUND BROOK, N.J. 08805

COMPLIANCE EVALUATION

SOURCE DEFICIENCIES QC. INC. P.O. BOX 574, SOUTHAMPTON PA 18966

THE NORTH PLAINFIELD, SOMERSET COUNTY ROCKVIEW TERRACE ROCKVIEW AVENUE WELLS AND THE WATCHUNG, SOMERSET TWO GUYS WELLS #1 & #2 ARE SHUT DOWN DUE TO VOLATILE ORGANIC CONTAMINATION. GREEN BROOK, SOMERSET COUNTY WELL #10 IS ABANDONED AND NOT PROPERLY SEALED.

TREATMENT DEFICIENCIES

NONE!

ATTACHMENT X-8

COMPLIANCE EVALUATION (Continued)

STORAGE AND/OR DISTRIBUTION DEFICIENCIES NONE

LICENSING, MONITORING AND/OR REPORTING DEFICIENCIES NONE

COMPLIANCE SAMPLING VIOLATIONS: NO Samples Taken

LOCATION	DATA SOURCE	PARAM	MAX CONTMNT LEVEL	RESULT	LOCATION	DATA SOURCE	PARAM	MAX CONTMNT LEVEL	RESULT

OVERALL COMPLIANCE RATING:

☒ ACCEPTABLE ☐ CONDITIONALLY ACCEPTABLE ☐ UNACCEPTABLE

NOTICE: YOU ARE REQUIRED TO INFORM THE N.J.D.E.P. IN WRITING OF YOUR ACTUAL OR INTENDED ACTIONS TO COMPLY WITH N.J.S.A. 58:12A-1 ET SEQ. VIA IMPLEMENTATION OF REMEDIAL MEASURES TO CORRECT THE DEFICIENCIES LISTED IN THIS REPORT. FAILURE TO ADEQUATELY RESPOND IN A TIMELY FASHION WILL RENDER YOU LIABLE FOR PENALTIES OF UP TO $5,000.00 FOR EACH VIOLATION, PURSUANT TO N.J.A.C. 7:10-3.

INSPECTOR: C L Topher B Ridle
Signature

CHRISTOPHER BRINDLE
Name

SR ENV. SPEC
Title

NORTHERN
Region

PERSON INTERVIEWED: Records GLENN JOHANSEN
INSP. RICH SADOWSKI
Name

SUPERINTENDENT - PLANT OPS.
ASST. SUP. WELLS + STATIONS
Title

ELIZABETHTOWN
Organization

ATTACHMENT 1-9

(2) Brian K.
(3) - Copies for County Book Central File

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 Route 46, Building 2
Parsippany, New Jersey 07054

(201) 299-7592
Fax # (201) 299-7719

JUL 24 1991

Mr. Norbert Wagner, Vice President Operations
Elizabethtown Water Company
1341 North Avenue
Plainfield, New Jersey 07061

Dear Mr. Wagner:

Re: Compliance Evaluation Inspection
Elizabethtown Water Company
P.W. - ID No.: 2004002
Munic/County: Plainfield, Union County

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on June 19 and 20, 1990.

Your facility received a rating of "ACCEPTABLE". A copy of the completed inspection report form is enclosed for your information. Please address any deficiencies noted therein.

1. The Green Brook well NO.10 has been abandoned and is not properly sealed.

Please be advised that pursuant to N.J.S.A. 58:14A-4.1, the owner of any well shall, upon abandonment of any existing well or test hole, so notify the Division and shall effectively seal and fill such wells and test holes in accordance with the rules and regulations of the Division. A well not in operation for three(3) or more years or improperly maintained to prevent contamination may be deemed to have been abandoned.

Questions pertaining to the sealing of abandoned wells should be referred to the Bureau of Water Allocation at the following address or by phone at (609) 984-6831.

Rich Kropp, Chief
Division of Water Resources
Bureau of Water Allocation
CN-029

ATTACHMENT 4-10

NOTE: Undersized mains exist within your system. All new mains and all future replacement of existing mains must be at least 6" in diameter, unless justified by hydraulic analysis and approved by the department.

This Division anticipates your continued cooperation in operating your facilities in a responsible and efficient manner.

Very truly yours,

Christopher Brindle

Christopher Brindle
Senior Environmental Specialist
Ground Water and Safe Drinking
Water Enforcement
Northern Bureau of Regional
Enforcement

CB:dc

Enclosure

c: Chief Joseph M. Mikulka, Northern Bureau of Regional Enforcement
Chief Barker Hamill, Bureau of Safe Drinking Water
Robert Williams, USEPA - Region II
Middle Brook Reg. Health Commission
Plainfield Health Department
Rich Sadowsky, Assistant Superintendant of Wells and Stations

ATTACHMENT 4-11

APPENDIX 1

ELIZABETHTOWN WATER COMPANY
WELL LIST

ATTACHMENT 4-12

Town	County	Facility Name	Permit and Application Number	Effective Date	Well Permit Number	Formation	Pump Cap. (GPM)	Motor HP	Type
Bound Brook	Somerset	Mountain Sta. #1					750	60	Turbine
Bound Brook	Somerset	Mountain Sta. #2					356	40	Turbine
Bridgewater	Somerset	Papen Road	5023	7/12/83	25-13435	Basalt	220	40	Turbine
Bridgewater	Somerset	Wells Road #1	5023	7/12/83	25-5803	Basalt	75	10	Turbine
Bridgewater	Somerset	Wells Road #2	5023	7/12/83	25-11512	Basalt	75	10	Turbine
Clark	Union	Elks Well	5027	7/12/83	26-4751	Brunswick	300	30	Turbine
Green Brook	Somerset	Green Brook #1	5045	6/7/83	45-23	Brunswick	520	60	Turbine
Green Brook	Somerset	Green Brook #2	5045	6/7/83	45-24	Brunswick	520	60	Turbine
Green Brook	Somerset	Green Brook #3	5045	6/7/83	45-25	Brunswick	250	30	Turbine
Green Brook	Somerset	Green Brook #4	5045	6/7/83	45-26	Brunswick	400	60	Turbine
Green Brook	Somerset	Green Brook #5	5045	6/7/83	25-572	Brunswick	600	75	Turbine
Green Brook	Somerset	Green Brook #6	5045	6/7/83	25-632	Brunswick	200		Submersible
Green Brook	Somerset	Green Brook #7	5045	6/7/83	25-633	Brunswick	300	40	Submersible
Green Brook	Somerset	Green Brook #8	5045	6/7/83	25-2715	Brunswick	400	50	Submersible
Green Brook	Somerset	Green Brook #9	5045	6/7/83	25-2716	Brunswick	300	50	Submersible
Green Brook	Somerset	Green Brook #10	5045	6/7/83	25-2718	Brunswick	500	60	Submersible
Green Brook	Somerset	Green Brook #11	5045	6/7/83	25-2717	Brunswick	200		Submersible
Green Brook	Somerset	Rock Avenue	5045	6/7/83	25-12665	Brunswick	330	40	Submersible
Kenilworth	Union	Quinton Avenue	5029	7/31/83	46-14	Brunswick	185	40	Turbine
Kenilworth	Union	Richfield Avenue	5029	7/31/83	46-15	Brunswick	250	30	Turbine
Middlesex	Middlesex	Sebrings Mill #4	5269	8/17/84	25-11582	Brunswick	200	25	Submersible
Middlesex	Middlesex	Sebrings Mill #6	5269	8/17/84	45-43	Brunswick	400	40	Submersible
Middlesex	Middlesex	Sebrings Mill #7	5269	8/17/84	25-11367	Brunswick	300	30	Submersible
Middlesex	Middlesex	Sebrings Mill #8	5269	8/17/84	25-13397	Brunswick	300	40	Submersible
Montgomery	Somerset	Montgomery #1	5021	6/7/83	28-5407	Stockton	450		Submersible
Montgomery	Somerset	Montgomery #2	5021	6/7/83	28-5511	Stockton	450		Submersible
Mountainside	Union	Bristol Road	5028	6/7/83	25-9206	Brunswick	330	40	Submersible
Mountainside	Union	Central Avenue	5028	6/7/83	25-9083	Brunswick	475	60	Submersible
Mountainside	Union	Charles Street #1	5028	6/7/83	25-872	Brunswick	300	40	Submersible
Mountainside	Union	Charles Street #2	5028	6/7/83	45-4	Brunswick	150	25	Submersible
N. Plainfield	Somerset	Board of Education	5045	6/7/83	45-22	Brunswick	400	50	Turbine
N. Plainfield	Somerset	Rockview Avenue	5045	6/7/83	25-13898	Brunswick	300		Submersible

ATTACHMENT X-13

Town	County	Facility Name	Permit and Application Number	Effective Date	Well Permit Number	Formation	Pump Cap. (GPM)	Motor HP	Type
Princeton	Mercer	Stony Brook #6	5026	7/12/83	48-11	Stockton	330	40	Turbine
Princeton	Mercer	Stony Brook #7	5026	7/12/83	48-12	Stockton	600	25	Submersible
Princeton	Mercer	Stony Brook #8	5026	7/12/83	48-13	Stockton	530	40	Turbine
Raritan Township	Hunterdon	Maple Glen					250	25	Submersible
Roselle	Union	Chandler Avenue	5029	7/31/83	26-2393	Brunswick	300	30	Submersible
Roselle	Union	First Avenue	5029	7/31/83	26-1696	Brunswick	450	50	Turbine
Roselle	Union	Walburga #1	5029	7/31/83	26-2302	Brunswick	200	40	Submersible
Roselle	Union	Walburga #2	5029	7/31/83	26-2360	Brunswick	200	60	Submersible
Roselle	Union	Walburga #3	5029	7/31/83	26-2412	Brunswick	350	40	Submersible
Roselle	Union	Walburga #4	5029	7/31/83	26-2463	Brunswick	300	50	Submersible
Scotch Plains	Union	Aberdeen Road	5049	6/7/83	25-12631	Brunswick	250	30	Submersible
Scotch Plains	Union	Glenside Avenue	5031	7/12/83	25-7173	Brunswick	150	20	Turbine
Scotch Plains	Union	Jerusalem Road #1	5031	7/12/83	25-130	Brunswick	275	30	Turbine
Scotch Plains	Union	Jerusalem Road #2	5031	7/12/83	25-649	Brunswick	350	30	Turbine
Scotch Plains	Union	Jerusalem Road #3	5031	7/12/83	25-800	Brunswick	150	15	Turbine
Scotch Plains	Union	Morse Avenue	5031	7/12/83	25-9281	Brunswick	295	30	Submersible
South Plainfield	Middlesex	Clinton Avenue	5045	6/7/83	25-13354	Brunswick	475	50	Submersible
South Plainfield	Middlesex	Eighth Street	5045	6/7/83	25-12632	Brunswick	450	50	Submersible
Springfield	Union	Springfield #1	5050	7/12/83	46-39	Brunswick	50	3	Submersible
Springfield	Union	Springfield #1A	5050	7/12/83	46-40	Brunswick	100	7.5	Turbine
Springfield	Union	Springfield #2					150	7.5	Submersible
Springfield	Union	Springfield #2A	5050	7/12/83	46-41	Brunswick	100	7.5	Turbine
Springfield	Union	Springfield #3	5050	7/12/89	26-4082	Brunswick	300	7.5	Turbine
Springfield	Union	Springfield #4						10	Turbine
Springfield	Union	Springfield #5						10	Turbine
Springfield	Union	Springfield #5A	5050	7/12/83	46-42	Brunswick	75	5	Turbine
Springfield	Union	Springfield #6	5050	7/12/83	26-4082	Brunswick	160	7.5	Submersible
Springfield	Union	Springfield #6A	5050	7/12/83	46-43	Brunswick	300		
Springfield	Union	Springfield #7	5050	7/12/83	46-44	Brunswick	100		
Springfield	Union	Springfield #7A	5050	7/12/83	46-45	Brunswick	75	7.5	Turbine
Springfield	Union	Springfield #8R	5050	7/12/83	46-46	Brunswick	100	10	Submersible
Springfield	Union	Springfield #9R	5050	7/12/83	46-47	Brunswick	200	7.5	Turbine
Springfield	Union	Springfield #11	5050	7/12/83	46-48	Brunswick	125	7.5	Submersible

ATTACHMENT 4-14

Town	County	Facility Name	Permit and Application Number	Effective Date	Well Permit Number	Formation	Pump Cap. (GPM)	Motor HP	Type
Springfield	Union	Springfield #12R							
Springfield	Union	Springfield #17							
Springfield	Union	Springfield #21R	5050	7/12/83	46-50	Brunswick	150	5	Turbine
Springfield	Union	Springfield #23					50	5	Turbine
Springfield	Union	Springfield #24	5050	7/12/83	46-51	Brunswick	60	3	Submersible
Springfield	Union	Springfield #25					100	10	Turbine
Springfield	Union	Springfield #29					100	5	Submersible
Springfield	Union	Springfield #32							
Springfield	Union	Springfield #36	5050	7/12/83	46-52	Brunswick	125	5	Submersible
Springfield	Union	Springfield #41					75	7.5	Submersible
Springfield	Union	Springfield #42	5050	7/12/83	46-53	Brunswick	100	5	Submersible
Springfield	Union	Springfield #43							
Springfield	Union	Springfield #44					50	5	Turbine
Springfield	Union	Springfield #47	5050	7/12/83	46-54	Brunswick	125	5	Submersible
Springfield	Union	Springfield #48	5050	7/12/83	46-55	Brunswick	75	5	Submersible
Springfield	Union	Springfield #50	5050	7/12/83	46-56	Brunswick	50	5	Turbine
Springfield	Union	Springfield #53	5050	7/12/83	46-57	Brunswick	175	7.5	Turbine
Springfield	Union	Springfield #54	5050	7/12/83	46-58	Brunswick	150	7.5	Turbine
Springfield	Union	Springfield #55	5050	7/12/83	46-59	Brunswick	175	7.5	Turbine
Tewksbury	Somerset	Pottersville	5022	6/7/83	25-15051	Pre-Cambrian	100	30	Submersible
Union	Union	Hummocks #1	5050	7/12/83	46-16	Brunswick	100		
Union	Union	Hummocks #1A	5050	7/12/83	46-17	Brunswick	200		
Union	Union	Hummocks #2A	5050	7/12/83	46-18	Brunswick	150		
Union	Union	Hummocks #3	5050	7/12/83	46-19	Brunswick	200		
Union	Union	Hummocks #3A	5050	7/12/83	46-20	Brunnwick	100		
Union	Union	Hummocks #4A	5050	7/12/83	46-21	Brunswick	200		Submersible
Union	Union	Hummocks #5	5050	7/12/83	46-22	Brunswick	200		
Union	Union	Hummocks #5A	5050	7/12/83	46-23	Brunswick	150		Submersible
Union	Union	Hummocks #6AR	5050	7/12/83	46-24	Brunswick	300		Turbine
Union	Union	Hummocks #7	5050	7/12/83	46-25	Brunswick	150		Submersible
Union	Union	Hummocks #8A	5050	7/1/283	46-26	Brunswick	250		Turbine
Union	Union	Hummocks #9A	5050	7/12/83	46-27	Brunswick	150		
Union	Union	Hummocks #10	5050	7/12/83	46-28	Brunswick	100		

ATTACHMENT X-1

Town	County	Facility Name	Permit and Application Number	Effective Date	Well Permit Number	Formation	Pump Cap. (GPM)	Motor HP	Type
N. Plainfield	Somerset	Rockview Terrace	5045	6/7/83	25-13106	Brunswick	200	25	Submersible
Piscataway	Middlesex	Rock Avenue	5045	6/7/83	25-13248	Brunswick	150	20	Submersible
Plainfield	Union	Fifth Street	5045	6/7/83	25-12961	Brunswick	300	40	Submersible
Plainfield	Union	George Street	5049	6/7/83	45-21	Brunswick	125	20	Turbine
Plainfield	Union	Netherwood #1	5049	6/7/83	45-9	Brunswick	225		Turbine
Plainfield	Union	Netherwood #2	5049	6/7/83	45-10	Brunswick	225		Turbine
Plainfield	Union	Netherwood #3	5049	6/7/83	45-11	Brunswick	600	40	Turbine
Plainfield	Union	Netherwood #4	5049	6/7/83	45-12	Brunswick	400	25	Submersible
Plainfield	Union	Netherwood #5	5049	6/7/83	45-13	Brunswick	300	15	Turbine
Plainfield	Union	Netherwood #6	5049	6/7/83	45-14	Brunswick	325	25	Turbine
Plainfield	Union	Netherwood #7	5049	6/7/83	45-15	Brunswick	350	25	Submersible
Plainfield	Union	Netherwood #8	5049	6/7/83	45-16	Brunswick	300	25	Turbine
Plainfield	Union	Netherwood #9	5049	6/7/83	45-17	Brunswick	300	25	Turbine
Plainfield	Union	Netherwood #10	5049	6/7/83	45-18	Brunswick	300	25	Submersible
Plainfield	Union	Netherwood #11	5049	6/7/83	45-19	Brunswick	250	15	Turbine
Plainfield	Union	Netherwood #12	5049	6/7/83	45-20	Brunswick	250		Turbine
Plainfield	Union	City of Plainfield	5045	6/7/83	45-27	Brunswick	400	50	Turbine
Plainfield	Union	Prospect Avenue	5049	6/7/83	25-9037	Brunswick	300	40	Submersible
Plainfield	Union	Watchung Avenue	5049	6/7/83	25-8185	Brunswick	280	30	Submersible
Plainsboro	Middlesex	Plainsboro #1	5024	7/12/83	28-9278	Raritan	350		Turbine
Plainsboro	Middlesex	Plainsboro #2	5024	7/12/83	28-11477	Raritan	295		Turbine
Princeton	Mercer	Edgerstoune	5026	7/12/83	28-5000	Stockton	125		Turbine
Princeton	Mercer	Grover Avenue	5026	7/12/83	28-2607	Raritan	100		Turbine
Princeton	Mercer	Harrison Street #1	5026	7/12/83	48-5	Stockton	100	20	Submersible
Princeton	Mercer	Harrison Street #3	5026	7/12/83	28-4371	Stockton	100	65	Turbine
Princeton	Mercer	Harrison Street #4	5026	7/12/83	48-6	Stockton	110	20	Turbine
Princeton	Mercer	Harrison Street #5	5026	7/12/83	48-7	Stockton	150	20	Turbine
Princeton	Mercer	Harrison Street #6	5026	7/12/83	28-1886	Stockton	400	50	Turbine
Princeton	Mercer	Harrison Street #7	5026	7/12/83	28-4999	Stockton	200	15	Submersible
Princeton	Mercer	Harrison Street #8	5026	7/12/83	28-5073	Stockton	200	40	Submersible
Princeton	Mercer	Stony Brook #2	5026	7/12/83	48-8	Stockton	330	40	Turbine
Princeton	Mercer	Stony Brook #3	5026	7/12/83	48-9	Stockton	280	30	Turbine
Princeton	Mercer	Stony Brook #4	5026	7/12/83	48-10	Stockton	100	15	Submersible

ATTACHMENT X-16

Town	County	Facility Name	Permit and Application Number	Effective Date	Well Permit Number	Formation	Pump Cap. (GPM)	Motor HP	Type
Union	Union	Hummocks #10A	5050	7/12/83	46-29	Brunswick	150		
Union	Union	Hummocks #11A	5050	7/12/83	46-30	Brunswick	100		
Union	Union	Hummocks #12A	5050	7/12/83	46-31	Brunswick	200		
Union	Union	Hummocks #17	5050	7/12/83	46-32	Brunswick	250		Submersible
Union	Union	Hummocks #19	5050	7/12/83	46-33	Brunswick	100		
Union	Union	Hummocks #23	5050	7/12/83	46-34	Brunswick	100		
Union	Union	Hummocks #26	5050	7/12/83	46-35	Brunswick	100		
Union	Union	Hummocks #28	5050	7/12/83	46-36	Brunswick	100		
Union	Union	Hummocks #29	5050	7/12/83	46-37	Brunswick	100		
Union	Union	Hummocks #41	5050	7/12/83	46-38	Brunswick	150		
Union	Union	Hummocks #H2	5050	7/12/83	26-4830	Brunswick	150		Turbine
Union	Union	Hummocks #H5	5050	7/12/83	26-4926	Brunswick	220		
Union	Union	Hummocks #TB2	5050	7/12/83	26-4808	Brunswick	200		
Union	Union	Hummocks #TB2A	5050	7/12/83	26-4829	Brunswick	400		
Watchung	Somerset	Two Guys #1	5049	6/7/83	25-8131	Brunswick	400	40	Submersible
Watchung	Somerset	Two Guys #2	5049	6/7/83	25-8132	Brunswick	60	20	Submersible
Westfield	Union	Elm Street	5031	7/12/83	25-8087	Brunswick	350	40	Submersible
Westfield	Union	Prospect Street	5031	7/12/83	25-12960	Brunswick	150	20	Submersible
Westfield	Union	Westfield Office #1	5031	7/12/83	25-873	Brunswick	500	50	Turbine
Westfield	Union	Westfield Office #2	5031	7/12/83	45-5	Brunswick	350	40	Turbine
Westfield	Union	Wittke #1	5031	7/12/83	25-4639	Brunswick	425	50	Turbine
Westfield	Union	Wittke #2	5031	7/12/83	25-5083	Brunswick	525	75	Turbine
West Windsor	Mercer	Jefferson Park #1	5020	6/7/83	28-5368	Raritan	600		Turbine
West Windsor	Mercer	Jefferson Park #2	5020	6/7/83	28-6455	Raritan	600		Turbine

---ELIZABETHTOWN WATER COMPANY---
STORAGE FACILITIES

TOWN	COUNTY	FACILITY NAME	MG RATED CAP	DIMENSIONS HI	DIA	YEAR IN SERVICE
Bound Brook	Somerset	Mountain Station	0.06	6'	25'	1965
Branchburg	Somerset	Cedar Grove	1.00	96'	42'	1967
Bridgewater	Somerset	Thompson Avenue	1.61	64'	66'	1988
Bridgewater	Somerset	Logan Road	1.00	24'	85'	1987
Bridgewater	Somerset	Rector Road	0.20	48'	27'	1962
Bridgewater	Somerset	Route 206	1.75	48'	80'	1975
Bridgewater	Somerset	Washington Avenue	0.11	50'	18'	1900
Bridgewater	Somerset	Washington Valley	1.00	76'	47'	1969
Edison	Middlesex	Oak Tree	10.00	60'	169'	1968
Edison	Middlesex	Oak Tree	10.00	60'	169'	1963
Edison	Middlesex	Oak Tree	0.90	96'	40'	1958
Edison	Middlesex	Oak Tree	5.00	56'	124'	1955
Hillsborough	Somerset	Starview Drive	0.20	32'	33'	1984
Kenilworth	Union	Kenilworth	2.00	105'	57'	1940
Montgomery	Somerset	Kildee	1.00	120'	38'	1967
Mountainside	Union	Coles Avenue	0.20	45'	27'	1941
Mountainside	Union	Prospect Street	0.50	88'	32'	1968
Plainfield	Union	Netherwood	0.50	13'	250'x22'	1910
Plainfield	Union	Netherwood	1.00	13'	200'x50'	1913
Pottersville	Somerset	Pottersville	1.00	32'	73'	1980
Princeton	Mercer	Drakes Corner	0.07	40'	16'	1931
Princeton	Mercer	Drakes Corner	0.145	40'	25'	1954
Princeton	Mercer	Harrison Street	1.00	17'	##	1930
Princeton	Mercer	John Street	0.535	53'	45'	1913
Princeton	Mercer	Stony Brook	0.235	16'	50'	1987
Princeton	Mercer	Stony Brook	0.385	16'	64'	1987
Princeton	Mercer	Terhune Tank	0.50	39'	50'	1957
Princeton	Mercer	Mount Lucas	3.00	24'	146'	1982
Raritan	Somerset	R.C.A.	0.35	96'	25'	1959
Scotch Plains	Union	Jerusalem Road	12.50	28'	200'x300'	1914
Scotch Plains	Union	Jerusalem Road	1.50	100'	50'	1961
Springfield	Union	Springfield	1.00	13'	116'	1933
Union	Union	Hummocks	1.00	10'	140'x100'	1951
Union	Union	Hummocks	5.00	40'	147'	1967
Union	Union	Hummocks	0.25	211'	40'	1965
Warren	Somerset	Mt. Horeb	0.49	64'	36'	1963
Watchung	Somerset	Hi-Tor	0.35	96'	25'	1963
Watchung	Somerset	Johnston Dr. (H)	0.50	92'	31'	1956
Watchung	Somerset	Johnston Dr. (L)	0.80	25'	75'	1899
West Windsor	Mercer	Jefferson Park	0.10	20'	30'	1969
West Windsor	Mercer	Jefferson Park	0.46	22'	60'	1985
TOTAL STORAGE.....			69.055			

= Five Sided Reservoir: 107' x 107' x 107' x 31.5' x 31.5' x 107'

ATTACHMENT X-17

APPENDIX #3

ATTACHMENT X-18

SERVICE TO OTHER SYSTEMS ---- INTERCONNECTIONS

Interconnected Purveyor	Interconnection Location	Agreement Commence	Agreement Expires	Daily Consumption	Type of Interconnection	Meter Size	Facility Number	Book Map
New Brunswick	Easton Avenue						591	J-15
Newark	Summit Avenue Linden Avenue				Normal		556	B-6
Rahway Water Department	Leesville Road	6/5/59	6/5/59		Emergency		562	C-10
	Woodbridge Avenue				Normal		568	C-10
	Madison Hill Road				Emergency		566	D-8
	Barnett Street				Normal		564	C-8
	Merck @ Linden Avenue				Emergency			
	E. Hazlewood @ Lakewood							
Rocky Hill	Washington St @ Young Dr				Emergency		620	Q-22
South Brunswick	Independence Way	5/1/87			Normal		630	O-24
Trenton Water	Princeton Pike				Emergency		624	D-29
Winfield Park	Parkway Dr. & Wavecrest						574	D-7
	N. Stiles & Seafoam				Normal		573	D-7

ATTACHMENT 4-9

SERVICE TO OTHER SYSTEMS ---- INTERCONNECTIONS

Interconnected Purveyor	Interconnection Location	Agreement Commence	Agreement Expires	Daily Consumption	Type of Interconnection	Meter Size	Facility Number	Book Map
Commonwealth Water Co.	Liberty Corners	1/1/77	12/31/99		Normal		502	M-8
	Main Street				Normal		465	P-4
	Main Street				Normal		466	P-4
	Ski-Hill				Normal		602	
	Ski-Hill				Normal		604	
	Route 202/206				Normal		600	P-7
	Diamond Hill				Normal		510	M-5
	Burnett Avenue	8/25/77						
	Carnegie Place	8/25/77						
	Summit Road							
	Ramsey Ave/Colt Street				Normal		508	B-3
	High Point Drive				Emergency			F-4
	Plfd. Rd. & Passaic Rd.				Normal			J-5
Edison Township Water Dept.	Talmadge Road	1/1/68	1/1/68		Normal		518	M-12
	Truman Dr. & Kilmer Rd.				Normal		516	M-14
	Stelton & Schoolhouse							
	Plainfield Avenue							
Elizabeth Water Department	Morris Avenue	1966	1991		Normal		528	A-5
	Lidgerwood Avenue				Normal		526	
	Westfield				Normal		534	B-6
	Brunswick Avenue				Emergency			A-7
	Waterfront & Allen				Normal		532	A-7
	Front Street							
	Clay Avenue				Normal		524	
	Salem Avenue				Emergency		536	A-4
	Palisades Road				Normal		530	B-5

ATTACHMENT L-20

SERVICE TO OTHER SYSTEMS ---- INTERCONNECTIONS

Interconnected Purveyor	Interconnection Location	Agreement Commence	Agreement Expires	Daily Consumption	Type of Interconnection	Meter Size	Facility Number	Book Map
Flemington Water Dept.	Reaville Avenue				Emergency		622	
Franklin Township	Landing Lane	1/14/75	1/24/05				588	J-15
	River Road						590	J-15
	Weston Canal Road				Normal		594	M-12
	Amwell Road				Normal			M-15
	Driver Harris						584	M-13
	East Millstone						586	M-15
	Schoolhouse				Normal		592	M-14
Highland Park	River Road	5/1/86	5/1/16		Normal		540	I-15
Lawrenceville	Laurel Wood Road	11/1/86	11/1/16		Normal			S-28
Manville Water	Finderne Avenue	8/1/89	8/1/19		Normal		608	N-12
Middlesex Water Co.	Randolph Avenue	5/5/65	12/31/90		Normal		548	C-10
	Woodbridge Avenue				Emergency			C-10
	Menlo Park				Emergency		546	E-12
	Robinson's Branch				Emergency		550	D-9
	Tingley Lane				Normal		552	G-10

APPENDIX #4

ATTACHMENT 4-24

ELIZABETHTOWN WATER COMPANY
BOOSTER PUMP LIST

Town	County	Facility Name	Motor-Pump #1 (HP)	Motor-Pump #1 (GPM)	Motor-Pump #2 (HP)	Motor-Pump #2 (GPM)	Motor-Pump #3 (HP)	Motor-Pump #3 (GPM)	Motor-Pump #4 (HP)	Motor-Pump #4 (GPM)	Motor-Pump #5 (HP)	Motor-Pump #5 (GPM)	Total Capacity (MGD)
Union	Union	Hummocks	100	1388	150	2083	200	2777	200	2777			13.00
Watchung	Somerset	Blue Ridge	40	300									0.43
Watchung	Somerset	Hi-Tor	15	400	15	400	15	400					1.73
Watchung	Somerset	Johnson Drive	30	150	75	500	75	500					1.66
Watchung	Somerset	King George	40	110	60	300	75	400					1.17
Watchung	Somerset	Lockheed	50	350	50	350							1.01
West Windsor	Mercer	Jefferson Park	100	600	100	600	50	300	50	300			2.60
Woodbridge	Middlesex	Woodbridge	600	61000									87.84

ATTACHMENT 1-20

ELIZABETHTOWN WATER COMPANY
BOOSTER PUMP LIST

Town	County	Facility Name	Motor-Pump #1		Motor-Pump #2		Motor-Pump #3		Motor-Pump #4		Motor-Pump #5		Total Capacity
			(HP)	(GPM)	(HP)	(GPM)	(HP)	(GPM)	(HP)	(GPM)	(HP)	(GPM)	(MGD)
Bedminster	Somerset	Bedminster	30	200	50	400	50	400					1.44
Bound Brook	Somerset	Mountain Station	50	600									0.86
Bridgewater	Somerset	Brown Road	25	230	30	400							0.91
Bridgewater	Somerset	New Garretson Rd.	50	900	50	900	50	900	50	900			5.18
Bridgewater	Somerset	Old Garretson Rd.	60	800	60	800							2.30
Bridgewater	Somerset	Mine Road	30	210	30	210							0.60
Bridgewater	Somerset	Old York Road	15	500	20	750	20	750					2.88
Bridgewater	Somerset	Route 202	15	750	7.5	350	25	1000					3.02
Bridgewater	Somerset	Thompson Avenue	75	450	75	450	150	900	150	900			3.88
Bridgewater	Somerset	Route 22	60	600	60	600							1.73
Edison	Middlesex	Oak Tree East	100	5000	100	5000	100	5000					21.60
Edison	Middlesex	Oak Tree West	150	3500	300	6950	300	6950	600	13890	400	10420	60.00
Edison	Middlesex	Potters	250	18100	250	18100							52.00
Hillsborough	Somerset	Daval Road	10	100	15	193							0.42
Hillside	Union	Leslie Street	15	200									0.29
Montgomery	Somerset	Montgomery Knoll	200	3400	200	3400	200	3400	200	3400	200	4000	25.34
Montgomery	Somerset	Montgomery	60	700	60	700							2.02
Mountainside	Union	Charles Street	60	600	60	600	60	600					2.59
Mountainside	Union	Mountainside	7.5	200	7.5	200							0.58
Peapack-Gladstone	Somerset	Chester Road	20	250	20	250	50	500					1.44
Piscataway	Middlesex	Washington Avenue	400	21000									30.24
Plainfield	Union	Netherwood	200	4305	200	4305	75	1740					14.90
Princeton	Mercer	Harrison Street	N/A	1050	N/A	1740							4.02
Princeton	Mercer	Mount Lucas	25	250	25	250	40	500	40	500			2.16
Princeton	Mercer	Pretty Brook	5	60	40	400							0.66
Princeton	Mercer	Stony Brook	40	350	100	1050	150	1740					4.52
Roselle	Union	Roselle East	200	2500	200	2600	300	3500					12.38
Roselle	Union	Roselle West	60	1400	100	2800	150	3472	60	1400			13.06
Scotch Plains	Union	Glenside Avenue	50	450	40	200	75	500					1.66
Scotch Plains	Union	Jerusalem Road	15	325	25	500	60	1740	60	1740			6.20
South Plainfield	Middlesex	Front Street	100	2100	60	1400							5.04
Springfield	Union	Springfield Station	200	2777	250	3472							9.00

7/81

DIVISION OF WATER RESOURCES
ENFORCEMENT & REGULATORY SERVICES

COMPLIANCE EVALUATION INSPECTION
PUBLIC COMMUNITY WATER SUPPLY

DATE May 9, 1991

BOOK 7-29-98

GENERAL INFORMATION

PURVEYOR/ FACILITY: RAHWAY WATER DEPARTMENT

FILE LOCATION: RAHWAY / UNION COUNTY | PW-ID #: 2013001

MAILING ADDRESS: 1045 WESTFIELD AVENUE, RAHWAY, NJ. 07065

ADMIN.: THOMAS SCHIMMEL, SUPERINTENDENT | REQUIRED LICENSES: T-4, W-3

BUSINESS TELEPHONE # Admin.: (908) (201) 388-0086 | Licensed Operators: GEORGE HULNIK, T-4, W-4; THOMAS SCHIMMEL, T-4, W-4

FACILITY DESCRIPTION

SOURCES: descriptions, locations, capacities(mgd): RAHWAY RIVER, TWO INTAKES AT TREATMENT PLANT, 6.0 MGD DIVERSION RIGHTS; ELIZABETHTOWN WATER CO., 1.069 MGD; WELL NO. 6, JUNIOR HIGH SCHOOL, 0.328 MGD.

Est Tot Eff Cap: 7.397 MGD

TREATMENT: source, type, capacities(mgd): GROUND WATER: FLUORIDATION, CHLORINATION SURFACE WATER: SCREENING, ACTIVATED CARBON, pH ADJUSTMENT (LIME) COAGULATION, FLOCCULATION, SEDIMENTATION, FILTRATION, CHLORINATION, DECHLORINATION, FLUORIDATION.

Est Tot Eff Cap: 6.328 MGD

FINISHED WATER STORAGE: descriptions, locations, capacities(mg): WATER SPHERE, 1045 WESTFIELD AVENUE, 0.5 MG; GROUND TANK, 1045 WESTFIELD AVENUE, 3.0 MG; UNDERGROUND CLEAR WELL, 1045 WESTFIELD AVENUE, 0.45 MG; ELEVATED TANK, HART STREET, 1.5 MG

Est Tot Cap: 5.45 MG

EMERGENCY INTERCONNECTIONS: descriptions, available gallonage(mgd): ELIZABETHTOWN WATER CO.: (1) 12 INCH - MADISONHILL ROAD, (1) 12 INCH - PINE STREET, (1) TEN INCH - LEESVILLE AVENUE, (1) 8 INCH - WOODBRIDGE ROAD

Est Tot Avail: 4-5 MG

AUXILIARY POWER: location, type, capabilities: TWO (2) NATURAL GAS POWERED DIRECT DRIVE PUMPS FOR RAW AND FINISHED WATER

ATTACHMENT A-23

NJDEP - DIVISION OF WATER RESOURCES
PUBLIC COMMUNITY WATER SUPPLY INSPECTION

DELIVERY INFORMATION

PLANT DELIVERED WATER (mgd,month,year) Max 6.45 MGD, JUNE 1990 Min 5.68 MGD, FEBRUARY 1990 Annual Average 6.02 MGD, 1990

BULK PURCHASES (provider,mgd) ELIZABETHTOWN WATER COMPANY, 0.95 MGD, 1990

BULK SALES (customer, mgd) NONE

NUMBER OF SERVICES 8,055 % METERED 100

MUNICIPALITIES SERVED (est. services in each) RAHWAY; LINDEN, COLONIA + CLARK ≈ 24 SERVICES

TOTAL ESTIMATED POPULATION SERVICED 26,600

CURRENT/RECENT WATER RESTRICTIONS NONE

NEW CONSTRUCTION (Project Numbers) NONE

DISTRIBUTION MAINS: Sizing 2 INCH (min) to 24 INCH (max)
Pressures 45 PSI (min) to 55 PSI (max)
Hydrants/Flushing Program YES / YES

MONITORING & REPORTING

PARAMETER(S)	FREQUENCY REQUIRED	FREQUENCY PERFORMED
A-280	2 / YEAR	6/11/90, 12/6/90
Coliform	30 / MONTH	30 MONTH
Inorganics	1 / 3 YEARS	6/20/90
Nitrate	—	6/20/90
Trihalomethanes	8 / QUARTER	3/23, 6/20, 9/20, 12/14
Organics	1 / 3 YEARS	5/15/90
Turbidity	DAILY	DAILY
Sodium, Fluoride	1 / YEAR	6/20/90
Secondary Regs	1 / YEAR	6/20/90
Corrosivity	1 / YEAR	6/20/90
Radionuclides	QUARTERLY EVERY 9TH YEAR	1987

NAME OF LABORATORY RAHWAY WATER DEPARTMENT LABORATORY CERTIFICATION # 20088

A-280: GARDEN STATE LABORATORIES CERT. # 07044

COMPLIANCE EVALUATION

SOURCE DEFICIENCIES WELL #6 DOES NOT POSSESS A SCREENED CASING VENT OR DIRECT ACCESS FOR MEASUREMENT; WELLS #1, 2, 4 + 5 DO NOT POSSESS ACCESS FOR DIRECT MEASUREMENT, SCREENED CASING VENTS, PRESSURE GAUGES OR FLOW METERS; WELL #1 DOES NOT POSSESS A DRAW DOWN GAUGE; WELLS #1, 2, 3, 4 + 5 HAVE BEEN OUT OF SERVICE SINCE 1987.

ATTACHMENT 2

TREATMENT DEFICIENCIES NONE

* Called 9/17/91 - spoke to Mr. Aulnik. Total estimated population serviced is 25,900. Serve only peripheral areas of Linden, Colonia and Clark, serve entire City of Rahway. One or two private well in Rahway

Form DWR-143

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
ENFORCEMENT & REGULATORY SERVICES

COMPLIANCE EVALUATION INSPECTION
PUBLIC COMMUNITY WATER SUPPLY

DATE OCTOBER 13, 1988

GENERAL INFORMATION

PURVEYOR/ FACILITY: NEW JERSEY AMERICAN WATER COMPANY - NORTHERN DIVISION

FILE LOCATION: MILLBURN / SHORT HILLS - ESSEX | PW-ID #: 0712001

MAILING ADDRESS: 233 CANOE BROOK ROAD, SHORT HILLS, NJ 07078

~~ADMIN.~~ DONALD L. CONYERS - MANAGER
SCOTT BAXTER-GREEN; WATER QUALITY SUPERINTENDENT

REQUIRED LICENSES: T - 4, W - 4

T-4 S. BAXTER-GREEN

BUSINESS TELEPHONE # Admin.: 376-8800 Licensed Operators: T-4 T. MATLACK W

FACILITY DESCRIPTION

SOURCES: descriptions, locations, capacities(mgd): SEE ATTACHED SHEET "A"

SURFACE WATER - 85.0 MGD

GROUND WATER - 18.3 MGD

BULK PURCHASES - 18.04 MGD Est Tot Eff Cap: 121.34 MGD

TREATMENT: source, type, capacities(mgd): SEE ATTACHED SHEET "B"

Est Tot Eff Cap: 27.34 MGD

FINISHED WATER STORAGE: descriptions, locations, capacities(mg): SEE ATTACHED SHEET "C"

Est Tot Cap: 23.22 MGD

EMERGENCY INTERCONNECTIONS: descriptions, available gallonage(mgd): SHEET ATTACHED SHEET "D"

Est Tot Avail: —

AUXILIARY POWER: location, type, capabilities: SEE ATTACHED SHEET "E"

ATTACHMENT L-25

NJDEP - DIVISION OF WATER RESOURCES
PUBLIC COMMUNITY WATER SUPPLY INSPECTION

DELIVERY INFORMATION

PLANT DELIVERED WATER (mgd,month,year) Max 48.87 MGD 6/88 Min 34.34 MGD 2/88 Annual Average 34.7 MGD

BULK PURCHASES (provider,mgd) P.V.W.C. - 3.15 MGD; ELIZABETHTOWN WATER Co. - 11.37 MGD; CITY of NEWARK - .016 MGD; LIVINGSTON TWP. - .55 MGD

BULK SALES (customer, mgd) ELIZABETHTOWN WATER Co. - .22 MGD; VILLAGE of SOUTH ORANGE - .94 MGD

NUMBER OF SERVICES 63,730 % METERED 100

MUNICIPALITIES SERVED (est. services in each) SEE ATTACHED SHEET "D"

TOTAL ESTIMATED POPULATION SERVICED 179,116

CURRENT/RECENT WATER RESTRICTIONS NONE

NEW CONSTRUCTION (Project Numbers) CHEMICAL FEED RENOVATION - 1987, BALTUSROL STATION RENOVATION, CHLORINE DIOXIDE PILOT PLANT ON TRIAL AT PLANT #2.

DISTRIBUTION MAINS: Sizing 4" & UNDER = 7% (min) to 36" (max)
Pressures 30 psi (min) to 220 psi (max)
Hydrants/Flushing Program YES/YES 1/YR & AS NEEDED

MONITORING & REPORTING

PARAMETER(S)	FREQUENCY REQUIRED	FREQUENCY PERFORMED
Coliform	130/MONTH	150/MONTH
Inorganics	1/YR	3/9/88 2YR
Nitrate	1/YR	3/9/88
Trihalomethanes	4/YR	2/88 5/88 8/88 4/YR.
Organics	1/3YRS	9/9/87 1/YR
Turbidity	DAILY	DAILY
SEC. REGS.	1YR	LIMITED PARAMETERS - MONTHLY
RADIONUCLIDES	1/4YRS. QUATERLY	1988
A-280	2/YR	2/12/88 2/YR
CORROSION COUPONS	-	CHECK 4x/YR.

NAME OF LABORATORY NEW JERSEY AMERICAN WATER COMPANY CERTIFICATION # 07097

~~ADDRESS~~ AMERICAN WATERWORK - BELLEVILLE LABS, BELLEVILLE, ILL. #100201, NJ #54457

COMPLIANCE EVALUATION

SOURCE DEFICIENCIES 1.) NO FLOW METER ON CONTINENTAL WELL; AND W ELL NOS. 46 AND 48
2.) WELL HEAD NOT PROPERLY SEALED, NO ACCESS TO TREATED TAP & NO FLOW METERS ON KELLY WELLS #4 & #5.

TREATMENT DEFICIENCIES NO DEFICIENCIES. ONE ADDITIONAL A-280 SAMPLE IS DUE FOR CALANDER YEAR 1988.

ATTACHMENT A-26

Let's protect our earth

DEC 27 1988

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
METRO BUREAU OF REGIONAL ENFORCEMENT
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY 07052

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

December 19, 1988

Mr. Scott Baxter - Green
New Jersey American Water Company
233 Canoe Brook Road
Short Hills, NJ 07078

Re: Compliance Evaluation Inspection
New Jersey American Water Company
P.W. ID No. : 0712001
Millburn/Essex County

Dear Mr. Baxter:

A Compliance Evaluation Inspection of your facility was conducted by representatives of this Division on October 13, 1988. A copy of the completed inspection form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1. Continental well, well No. 46, well No. 48, Kelly well No. 4, and Kelly well No. 5 are not equipped with a flow meter as required by N.J.A.C. 7:10-11.4 (q)3.

2. Kelly well No. 4 and Kelly well No. 5 do not have properly sealed well heads in violation of N.J.A.C. 7:10-11.4(L)1.

3. Inadequate storage capacity exists within your system. The New Jersey Safe Drinking Water Act and the Water Management Act, require a finished water storage capacity equal to one day's annual average usage. If you feel that such a requirement is an unnecessary burden on your facility, an application for a storage waiver may be obtained from:

Mr. Barker Hamill, Chief
Bureau of Safe Drinking Water
Division of Water Resources
P.O. Box CN-029
Trenton, NJ 08625

ATTACHMENT 4-27

Since the deficiencies cited are presently, or could in the future, adversely affect the quantity and/or quality of water you provide to your customer, you are DIRECTED to institute measures to correct the deficiencies. A written report concerning specific details of the remedial measures to be instituted, as well as an implementation timetable, must be submitted to this Division within thirty (30) calendar days of the date of this correspondence.

The New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.) provides for substantial monetary penalties for violations of the Act.

Failure to comply with the above will result in the initiation of enforcement action by this Department. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Please direct all correspondence and inquiries to John Brennan, of my staff, who can be reached at (201) 669-3900 or by letter through this Division.

Very truly yours,

Gloria T. Grant

Gloria T. Grant
Supervisor, Ground Water
Unit Coordination
Metro Bureau of
Regional Enforcement

E15:G26

C: Bureau of Safe Drinking Water
Mr. Robert Williams
Mr. William Faitoute, H.O.

ATTACHMENT X-26

NJDEP - DIVISION OF WATER RESOURCES
PUBLIC COMMUNITY WATER SUPPLY INSPECTION

COMPLIANCE EVALUATION (Continued)

STORAGE AND/OR DISTRIBUTION DEFICIENCIES UNDERSIZED MAINS EXIST WITHIN THE SYSTEM.

LICENSING, MONITORING AND/OR REPORTING DEFICIENCIES NONE

COMPLIANCE SAMPLING VIOLATIONS: NO SAMPLES TAKEN

LOCATION	DATA SOURCE	PARAM	MAX CONTMNT LEVEL	RESULT	LOCATION	DATA SOURCE	PARAM	MAX CONTMNT LEVEL	RESULT

OVERALL COMPLIANCE RATING:

☐ ACCEPTABLE ☐ CONDITIONALLY ACCEPTABLE ☒ UNACCEPTABLE

NOTICE: YOU ARE REQUIRED TO INFORM THE N.J.D.E.P. IN WRITING OF YOUR ACTUAL OR INTENDED ACTIONS TO COMPLY WITH N.J.S.A. 58:12A-1 ET SEQ. VIA IMPLEMENTATION OF REMEDIAL MEASURES TO CORRECT THE DEFICIENCIES LISTED IN THIS REPORT. FAILURE TO ADEQUATELY RESPOND IN A TIMELY FASHION WILL RENDER YOU LIABLE FOR PENALTIES OF UP TO $5,000.00 FOR EACH VIOLATION, PURSUANT TO N.J.A.C. 7:10-3.

INSPECTOR: John M. Brennan
Signature

J. BRENNAN / R. FEDAK
Name

ENVIRONMENTAL SPECIALISTS
Title

METRO
Region

PERSON INTERVIEWED: SCOTT BAXTER-GREEN
WILLIAM OSTERLE
Name

WATER QUALITY SUPERINTENDENT
MAINTENANCE SPECIALIST
Title

NEW JERSEY AMERICAN WATER CO.
Organization

ATTACHMENT X-29

ATTACHED SHEET "A"

Sources	Description	Location	Capacity MGD
1. Surface Water	Passaic River	Plant at Kennedy Pkwy	Diversion Rights- 1. 80 MGD except between June 1st & Sept, 30th, or when downstream flow is < 75MGD. 2) 2.12MGD minus +/- 1MGD from the northeast well
	Canoe Brook	Short Hills, North of Route 24	Diversion Rights - 5MGD
	a. Reservoir #1	Short Hills	Gross Storage (735.0)
	b, Reservoir #2	Short Hills	(454.0)
	c. Reservoir #3	Livingston Essex	(1950.0)
2. Ground Water	Canoe Brook Well Field Continental Wells # 1,38,44,46,47,48 Lane E, Lane D, Kelly Wells # 1,2,4,5,6	Millburn Essex	9.157MGD
3. Ground Water	Short Hills Well Field Wells A,B,C,	Springfield Union	3.66 MGD
4. Ground Water	Baltusrol Well Field Wells 12,14,15, 17,18	Summit Union	2.07 MGD
5. Ground Water	Passaic River Well Field Wells 50- observation well, 51& 52	Chatham Morris	2.45 MGD
6. Ground Water	Northeast Well #1	Bernardsville Somerset	1.0 MGD
7. Bulk Purchase	Elizabethtown Water Co. Coit St. 1-20" Diamond Hill Rd. 1-6"	Hillside Union Berkeley Heights Union	10.88

ATTACHMENT X-30

Sources	Description	Location	Capacity MGD
8. Bulk Purchase	P.V.W.C. Pleasant Valley 1-24"	West Orange	7.155
9. Bulk Purchase	Newark Water Co. Shaw Ave. 1-2" Selvage St. 1-6"	Newark Newark	.005

ATTACHMENT X-31

ATTACHED SHEET "B"

Treatment

A. Canoe Brook

1. Surface (two plants) - prechlorination, taste - odor control (carbon) as needed ; alum, sedimentation, ph adjustment (lime) , filtration (dual media-anthracite and sand), chlorination (gas). Rated capacity of each plant = 10 MGD.

2. Well Supply - chlorination (gas)

B. Short Hills - chlorination (gas)

C. Baltusrol - chlorination (gas) and ph adjustment (caustic)

D. Passaic River Wells - chlorination (gas)

ATTACHMENT L-32

ATTACHED SHEET "C"

FINISHED WATER STORAGE

DESCRIPTION	LOCATION	CAPACITY MG
1. Ground (concrete)	West Orange-Gregory / Mt. Pleasant Ave. West Orange Tank	1.0
2. Standpipe	West Orange-Marcella Ave. Tank	2.3
3. Standpipe	West Orange-(Manger Rd.) Second Mountain Tank	1.5
4. Standpipe	Chatham-Buxton Road-Chatham Tank	1.42
5. Ground (steel)	Berkeley Hgts.-Bendor's Corner Tank	3.0
6. Ground (concrete)	Millburn-Wyoming Ave. Tank #1	1.0
7. Ground (concrete)	Millburn-Wyoming Ave. Tank #2	1.7
8. Ground (concrete)	Millburn-(Fairfield Ave.) South Mountain Tank #1	2.0
9. Ground (concrete)	Millburn-(Fairfield Ave.) South Mountain Tank #2	2.0
10. Ground (concrete)	Short Hills-Wyoming High Service	0.24
11. Ground (steel)	Short Hills-(Hartshorn-Drive) Short Hills Tank	1.1
12. Ground (steel)	Short Hills-Canoe Brook Station Tank	2.0
13. Ground (concrete) (2)	Short Hills-Canoe Brook Station	0.29
14. Standpipe	Bernardsville-Bernard's Tank	1.0
15. Elevated	Bernardsville-Knollcraft (Rd.) Tank	1.0
16. Elevated	Bedminister-Hills Tank	0.25

ATTACHMENT A-33

Cont'd

FINISHED WATER STORAGE

DESCRIPTION	LOCATION	CAPACITY MG
17. Elevated	Berkeley Heights-J.H. King Tank	0.75
18. Elevated (steel)	Bridgewater-Highlands tank	.67

ATTACHMENT X-34

ATTACHED SHEET "D"

Emergency Interconnections

1. Commonwealth Water, Bernard's Div., Stirling, Springfield Ave. (6)"
   Newark, Springfield Ave. (6")
2. Newark Water Department, Irvington, Myrtle Ave., (6" + 10")
3. Montclair Water Department, Mountain Ave. (8"), Harrison Ave. (8")
4. Orange Water Department, Millburn, White & Spring Streets (6")
5. Livingston Water Department, Short Hills, White Oak Ridge Rd. (12")
   East Hobart Gap Rd. (8")
6. South Orange, Wyoming & Luddington Ave. (6")
   Wyoming & West End (6"), Cedar Lane (12")
7. East Orange, Wyoming & Mountain Aves (12")
8. Verona, Fairway Ave. (6")
9. Chatham, Inwood Rd. (6")
10. Elizabethtown Water Co., High Point Dr. (6")

MUNICIPALITIES SERVED	CONNECTIONS	POPULATION
1. Summit	6345	17068
2. New Providence	3756	11193
3. Springfield	4442	11194
4. Berkeley Heights	3628	10195
5. Millburn	6417	17968
6. Maplewood	6927	19742
7. Chatham	2738	8269
8. Passaic Township	2350	7097
9. Irvington	9428	26304
10. Union	142	399
11. West Orange	10,878	30,023
12. Hillside	19	53
13. Bernards Township	4037	11,909
14. Bernardsville	1573	4640
15. Warren Township	13	39
16. Bedminister	1037	3,059
17. Far Hills	118	348
18. Harding Township	22	66
19. Watchung Boro	34	100

ATTACHMENT A-35

ATTACHED SHEET "E"

Booster Station	# of Pumps	Pumping Capacity (MGD)	Auxiliary Power	Location
Second Mountain	2	4.0	One diesal driven pump	West Orange
Hudson Road	1	1.0		Berkeley Heights
Basking Ridge	3	3.18	Diesel generator	Bernards TWP.
Tower Mountain	3	.965		Bernardsville
Oak Place	3	.806		Bernardsville
South Finley Avenue	1	0.5		Bernards Township
Mt. Airy Road	1	0.5		Bernards Township
Coit Street	3	9.0	One diesel driven pump	Irvington
Diamond Hill	4	18.0		Berkeley Heights
Short Hills	2	3.0	One diesel driven pump	Springfield
Wyoming	2	.936		Millburn
White Oak Ridge	3	17.5	One diesel driven pump	Millburn
West Orange	2	2.43		West Orange
Parsonage Hill	2	1.72		Millburn
Chatham	1	3.0		Chatham Township
Passaic Valley	3	11.7		West Orange
Eagle Rock	2	.619		

Inspected during 1988 inspection:
Lane E well - out of service and sealed
Continental well #1 - out of service and sealed, #46, #48
Kelly well #1, #4, #5, #6 - out of service and sealed

ATTACHMENT X-36

ATTACHMENT Y

MEMO
TO: FILE
FROM: ANDREW CYR NJDEPE/DRPSR/BSA
SUBJECT: STORM WATER RUNOFF AT MAGNUS SITE

ON DECEMBER 3, 1991 I SPOKE WITH THE GARWOOD BOROUGH ENGINEER ABOUT STORM WATER RUNOFF AND STORM DRAINS ALONG SOUTH AVE. IN GARWOOD. HE STATED STORMS DRAIN LOCATED ON SITE WOULD CONNECT WITH STORM DRAINS LOCATED ALONG SOUTH AVE.. THE DRAINS FLOW ALONG SOUTH AND THEN DISCHARGE INTO A SMALL BROOK APPROX. 2000 FEET EAST OF THE SITE. THE BOOK FLOWS TOWARD THE RAHWAY RIVER.

ATTACHMENT 4

ATTACHMENT Z

New Jersey 1988 State Water Quality Inventory Report

A Report on the Status of Water Quality in New Jersey Pursuant to the New Jersey Water Pollution Control Act and Section 305(b) of the Federal Clean Water Act

State of New Jersey
Department of Environmental Protection
Division of Water Resources
Bureau of Water Quality Planning
Trenton, New Jersey

Thomas H. Kean, *Governor*
Richard Dewling, P.E., Ph.D., *Commissioner*
George G. McCann, P.E., *Director*

May, 1988

ATTACHMENT 24

29. RAHWAY RIVER (INCLUDING THE ELIZABETH RIVER)

Watershed Description

Measured from the headwaters to the City of Rahway, the Rahway River drains an area of 41 square miles, which includes parts of Middlesex, Union, and Essex Counties. The mainstem, 24 miles long, flows from Union into the Arthur Kill near Linden and is tidal from the Pennsylvania Railroad bridge at Rahway down to the mouth. This is a densely populated area, with the centers of population being Rahway, Woodbridge, Clark, Springfield, Cranford, Westfield, and Kenilworth. Major tributaries to the Rahway River include the East Branch Rahway River, Woodbridge River, and Robinsons Branch. The major impoundments are the Middlesex Reservoir, Orange Reservoir, Lower and Upper Echo Lakes, and Diamond Mill Pond. The Elizabeth River is 11 miles long, much of it being channelized for flood control purposes.

Land uses in these watersheds are residential, commercial, industrial and other uses. There are 53 NJPDES permitted discharges identified in the Rahway and Elizabeth watersheds, all except 5 are industrial/commerical. The waters of the Rahway and Elizabeth Rivers and tributaries have been classified FW-2 Nontrout, SE-2, and SE-3.

Water Quality Assessment

Routine water quality monitoring is performed at three locations on the Rahway River: the West Branch at West Orange, near Springfield and at Rahway. The Elizabeth River is monitored at Ursino Lake in Elizabeth. The Rahway River has fair water quality along its length with generally improving conditions in the downstream direction. The Elizabeth River is severely degraded, especially during the early summer period.

The West Branch Rahway River has fair overall quality with conditions approaching poor quality in late summer. Fecal coliform, total phosphorus, and total dissolved solids are found at problematic levels. Fecal coliform counts had a geometric mean of 1445 MPN/100ml from 1983 to 1987 with 85 percent greater than 200 MPN/100ml. Total phosphorus has averaged .11 mg/l from 1983 to 1987, during which the majority of samples exceeded State criterion. Total dissolved solids have averaged 364 mg/l, among the highest of all monitoring stations in the State. While dissolved oxygen concentrations appear adequate, saturation occasionally falls below 80 percent in the fall.

Near Springfield the Rahway River has its worst monitored water quality. Although overall quality is considered fair, it is poor during late spring/early summer. Excessive fecal coliform and total phosphorus concentrations are found at this location. Periodically, low dissolved oxygen along with high total dissolved solids measurements also occur. Fecal coliform counts had a geometric mean of 1352 MPN/100ml near Springfield, while total phosphorus concentrations averaged around the .1 mg/l criterion for flowing waterways. Occasionally high inorganic nitrogen was also detected. Dissolved oxygen saturation averaged only 74 percent near Springfield, with low dissolved oxygen concentrations often below 4.0 mg/l during early summer. At Rahway conditions are improved over what is found near Springfield. Fecal coliform and total phosphorus are still excessive, but levels are, for the most part, lower. Fecal coliform had a geometric mean of 538 MPN/100ml with 70 percent above State criterion. Solids continue to be present at high concentrations on a periodic basis.

The Elizabeth River drains highly developed urban lands adjacent to the Rahway watershed. Water quality in the Elizabeth River is fair to poor with very poor conditions in May to July. The river, channelized in sections, has fecal coliform concentrations which averaged 13154 MPN/100ml from 1983 to 1987 and excessive phosphorus and nitrogen. Total phosphorus was above State criterion in 61 percent of the samples, while inorganic nitrogen was excessive in

ATTACHMENT 2-2

one-third of the measurements taken. Dissolved oxygen saturation often exceeds 120 percent during summer months indicating elevated primary productivity. Total dissolved solids have also occurred at elevated levels, averaging 435 mg/l during the period of review.

The warm water fish community of the Rahway River has been evaluated by the New Jersey Division of Fish, Game, and Wildlife as moderately degraded. Morses Creek and the Elizabeth River are judged to be containing degraded fish communities; few fish are reported to be able to survive in either waterway.

Problem and Goal Assessment

Point Source Assessment

Water quality of the Rahway and Elizabeth Rivers are reflective of urbanized streams. The presence of high nutrients, fecal coliform and biochemical oxygen demand is thought to be from nonpoint sources and municipal/industrial point sources. Both the Lower Elizabeth and Rahway Rivers have combined sewer overflows discharging during storm events, however the impacts are most severe in the Elizabeth River. There are 16 Department enforcement actions against discharges that are impacting water quality in these two watersheds. They range from facilities not meeting permit limitations to raw sewage discharges. Hazardous wastes sites are present in these watersheds, but none have been identified to be contaminating surface waters. In the lower tidal sections of the Elizabeth and Rahway Rivers water quality is reduced because of boundary conditions (i.e., Arthur Kill water quality).

Nonpoint Source Assessment

The Rahway River watershed is highly urbanized and its waterways are severely degraded both by nonpoint source pollution and by the physical alterations which extensive urbanization has brought about. In addition to pollution and habitat destruction, flood control has been a major problem in this watershed. Known sources of nonpoint pollution in the Rahway River include construction activities, storm sewers, urban surfaces, roads, and combined sewer overflows; all of which have contributed to high stream temperatures, sediment and nutrient loadings, periodic low dissolved oxygen levels, and fishkills. Another problem in this watershed is landfill leachate which is believed to have contributed to the degradation of the tidal Rahway River, as well as to the adjacent Arthur Kill, Marshes Creek, and Kings Creek.

Morses Creek and the Elizabeth River, draining almost totally developed watersheds, have been extensively channelized. Both are judged to support minimal fish life due to the combined effects of habitat loss and severe water pollution levels coming from numerous nonpoint and point sources. The Elizabeth River has been described as chronically polluted over its entire length.

Designated Use and Goal Assessment

The Rahway and Elizabeth Rivers are not of swimmable quality. Severe pollution of the Elizabeth River along with channelization combine to cause a degraded fish community in the river. Therefore, the freshwater Elizabeth River is classified as not achieving the fish propagation/maintenance use and goal. The freshwater Rahway River is considered to be partially meeting the fish propagation/maintenance use because of a moderately degraded fish community. Designated use attainment (which is generally less than the swimmable/fish propagation goal) in the tidal portions of both rivers is not known because of a lack of water quality information.

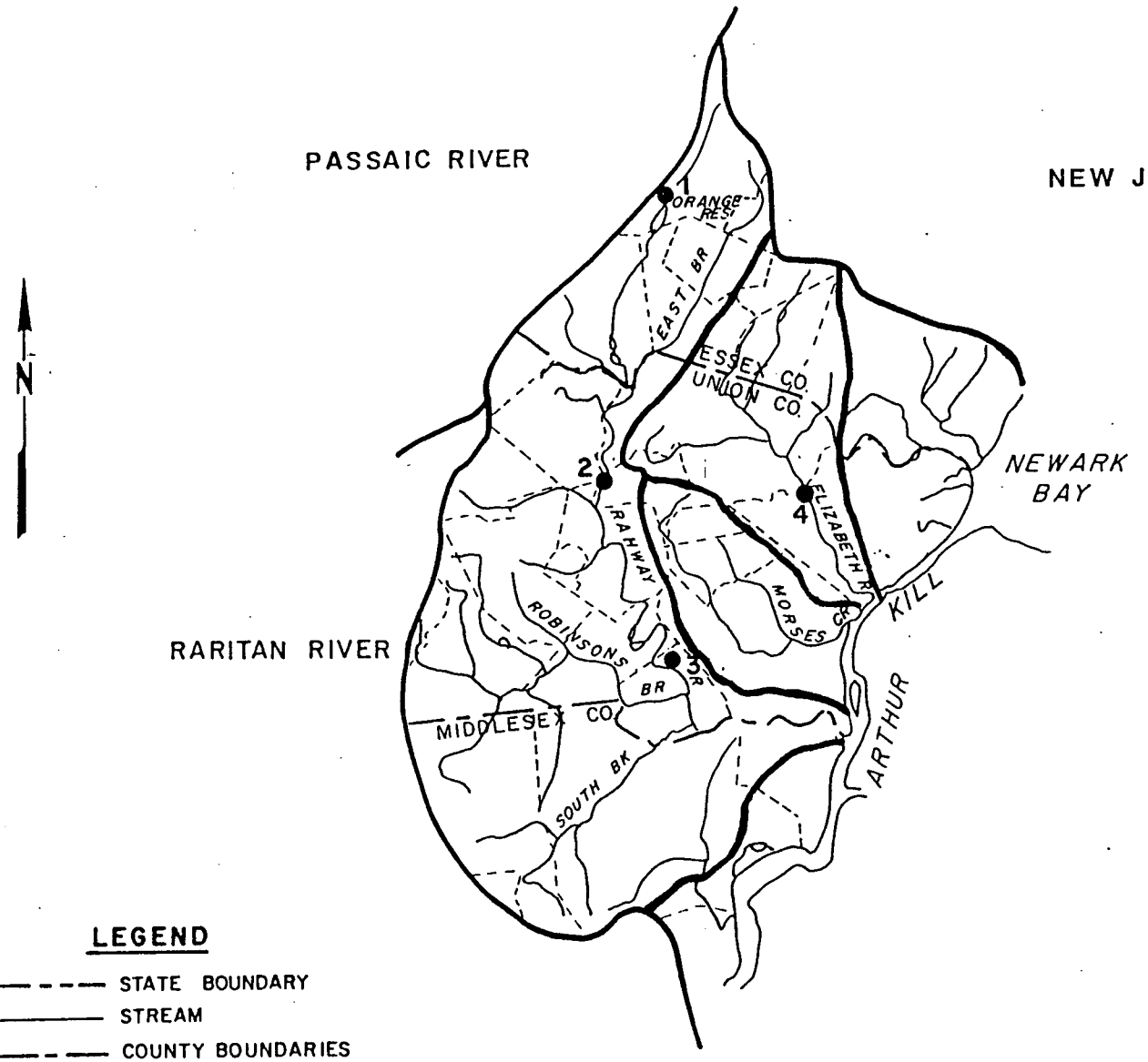
Monitoring Station List

Map Number	Station Name and Classification
1	West Branch Raritan River at West Orange, FW-2 Nontrout
2	Rahway River near Springfield, FW-2 Nontrout
3	Rahway River at Rahway, FW-2 Nontrout
4	Elizabeth River at Ursino Lake, FW-2 Nontrout

ATTACHMENT Z-3

RAHWAY RIVER

NEW JERSEY STATE WATER QUALITY INVENTORY REPORT



LEGEND

- STATE BOUNDARY
- STREAM
- COUNTY BOUNDARIES
- MUNICIPAL BOUNDARIES
- WATERSHED BOUNDARIES
- WATER SAMPLING STATIONS

0 1 2 3 4 8

SCALE IN MILES

LOCATION OF BASIN

III-234

ATTACHMENT 2-4

WATER QUALITY INDEX PROFILE 1983-1987

Rahway River

WATER QUALITY INDICATORS

STATION		TEMP	OXYGEN	PH	BACTERIA	NUTRIENTS	SOLIDS	AMMONIA	METALS	OVERALL AVERAGE AND CONDITION
West Branch Rahway River at W. Orange	AVG WQI	2	15	2	47	27	20	2	9	41 Fair
	WORST3 MONTHS	June-August	Sept-Nov	Feb-April	August-Oct	June-Aug	Dec-Feb	July-Sept	Sept-Nov	58 Fair Aug-Oct
Rahway River near Springfield	AVG WQI	2	32	3	48	18	14	2	9	43 Fair
	WORST3 MONTHS	June-August	May-July	Feb-April	June-August	May-July	Dec-Feb	April-June	June-August	72 Poor May-July
Rahway River at Rahway	AVG WQI	3	15	5	40	18	11	3	15	29 Fair
	WORST3 MONTHS	June-August	July-Sept	Feb-April	Sept-Nov	August-Oct	Feb-April	April-June	Sept-Nov	39 Fair June-August
Elizabeth River at Ursino Lake	AVG WQI	3	17	6	74	24	20	5	14	59Fair/Poor
	WORST3 MONTHS	June-August	June-August	Feb-April	May-July	May-July	Nov-Jan	July-Sept	April-June	82FeryPoor May-July

LEGEND - Water Quality Index Description

WQI	Condition	Description	WQI	Condition	Description
0-10	Excellent	No or minimal pollution; water uses met throughout the year.	61-80	Poor	Pollution in high amounts; water uses not met.
11-25	Good	Generally low amounts of pollution; water uses periodically not met.	81-100	Very Poor	Pollution occurs at extremely high levels; severe stress to stream life; water uses not met.
26-60	Fair	Pollution amounts vary from moderate to high levels; certain water uses prohibited.	ID	Insufficient Data	

An index of 20 is equivalent to the level of water quality criteria.

ATTACHMENT Z-5

N.J.P.D.E.S. DISCHARGE INVENTORY

RAHWAY RIVER
WATERSHED: ELIZABETH RIVER

DISCHARGE NAME	# NJPDES	RECEIVING WATERS	MUNICIPALITY/COUNTY	TYPE
Investment Casting Corp	0034525	Rahway River	Springfield Twp./Uni	Ind/Comm
Koppers Co., Inc.	0032751	Rahway River	Westfield Town/Unio	Ind/Comm
Durex	0031127	Rahway River	Union City/Hudson	Ind/Comm
Monsanto Co.	0001554	Rahway River	Kenilworth Boro/Uni	Ind/Comm
Schering Corp.	0002305	Rahway River	Kenilworth Boro/Uni	Ind/Comm
Schering Corp.	0002291	Elizabeth River	Union/ Union	Ind/Comm
McMillan Bloedel Cont. Inc.	0029611	Elizabeth River	Union/ Union	Ind/Comm
Rotary Pen Corp.	0034568	Kenilworth Brook	Kenilworth/Union	Ind/Comm
Springfield Die Casting Co.	0034070	West Brook	Kenilworth/Union	Ind/Comm
New Departure Hyatt Bearing	0001066	Rahway River	Clark /Union	Ind/Comm
Solar Compounds Corp.	0003395	Rahway River	Linden/Union	Ind/Comm
Huffman & Koos Co. Inc.	0003883	Rahway River	Rahway/Union	Ind/Comm
Merck & Co. Inc.	0002348	Kings Creek	Linden/Union	Ind/Comm
Turtle & Hughs Co. Inc	0025429	Kings Creek	Linden/Union	Ind/Comm
Rahway City DPN	0025585	Rahway River	Rahway/Union	Ind/Comm
Exxon Co. USA	0026671	Rahway River	Linden/Union	Ind/Comm
American Cyanamid-Warners	0001058	Rahway River	Linden/Union	Ind/Comm
Township of S. Orange Village	0052426	Rahway River	South Orange/Essex	Ind
Amerada Hess-Port Reading	0028878	Port Reading Rea.	Woodbridge/Middlesex	Ind/Comm
Gulf Oil Co.-Linden	0000311	Bk. Rahway River	Linden/Union	Ind/Comm
B.P. Oil Inc.	0000515	Rahway River	Linden/Union	Ind/Comm
Orange City Water Filtration	0034592	Rahway River	Orange/Essex	Municipal
Coastal Oil Corp.	0027880	Trib to Clark Res.	Clark/Union	Ind/Storm
Witco Chemical Corp.	0031411	Stream SWR to Robi	Clark/Union	Therm/Storm
Elizabeth, City of	0020648	Elizabeth River	Elizabeth/Union	Municipal
Joint Mtg. Essex & Union	0024741	Elizabeth River	Elizabeth/ Union	Municipal
Watchung Die Casting Co	0055271	Garwood Brook	Garwood/Union	Thermal
ECD Inc.	0031186	Elizabeth River	Hillside Twp/Union	Thermal
Atlas Tod Company	0035980	Elizabeth River	Hillside Twp/Union	Thermal
EMCO Graphics, Inc.	0061867	Elizabeth River	Hillside Twp/Union	Thermal
Supermarket Services	0022225	King's Creek	Linden/Union	Municipal
Citgo Petroleum Corp	0024554	Rahway River	Linden/Union	Industrial

ATTACHMENT Z-6

RAHWAY RIVER
WATERSHED: ELIZABETH RIVER

N.J.P.D.E.S. DISCHARGE INVENTORY

DISCHARGE NAME	# NJPDES	RECEIVING WATERS	MUNICIPALITY/COUNTY	TYPE
Carpenter Tech.- Tube Div.	0052931	Rahway River		Ind/Ther/SW
Exxon Bayway Refinery	0026662	Rahway River	Linden/Union	Ind.
AI Manufacturing Corp.	0035203	Kings Creek	Linden/Union	Ind.
Palnut Division of TRW In	0035530	Echo Brook	Mountainside/Union	Ind/Thermal
Rahway DPW, City of	0025585	Rahway River	Rahway/Union	Municipal
Dri-Print Foils, Inc	0062138	Rahway River	Rahway/Union	Thermal/SW
Custom Molders Corporation	0052531	Cedar Brook	Scotch Plains/Union	Industrial
County of Union	0002887	Briant Brook	Springfield Twp/Unio	Ind.
Schiable Oil Corp.	0056219	Rahway River	Springfield Twp/Unio	Ind.
Engelhard Corp	0001180	Rahway River	Union Twp/Union	SW
Elastic Stop Nut	0003433	Storm Sewer to L	Union Twp/Union	Ind./Therm
Teledyne Adams	0029416	Rahway River	Union Twp/Union	Thermal
Tuscan Dairy Farm	0034266	Elizabeth River	Union Twp/Union	Thermal
Tuff Lite Corp	0032883	Rahway River	Edison/Middlesex	Ind/Therm
Continental Fibre Drum	0001121	Drainage Ditch T	Carteret/Middlesex	Thermal
American Alum. Cast Co	0060194	Elizabeth	Irvington/Essex	Ind
Mitchell-Supreme Fuel	0061921	Rahway River	Orange/Essex	Ind
Mobil Oil - Linden Term	0062103		Linden/Union	Ind
Polychrome Corp	0062821	Robinson's Creek	Clark/Union	Ind
Browning-Ferris Ind	0062057	Newark Bay	Elizabeth/Union	Ind
Stephens-Miller Co	0061573	Briant's Pond	Summit/Union	Ind

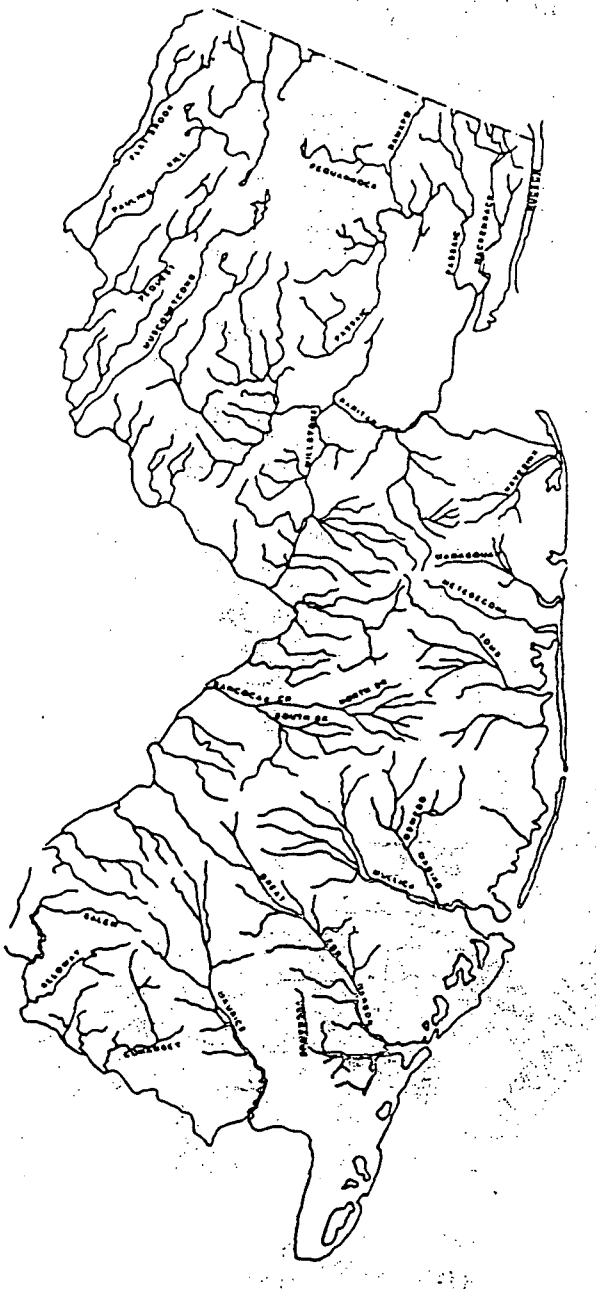
ATTACHMENT Z-7

ATTACHMENT AA

Let's protect our earth

Surface Water Quality Standards

N.J.A.C. 7:9-4.1 et seq.



AUGUST 1989

New Jersey Department of Environmental Protection
Division of Water Resources

ATTACHMENT AA-1

POMPTON RIVER (Wayne) - Entire length	FW2-NT
POND BROOK (Oakland) - Entire length	FW2-NT
POSTS BROOK	
(Bloomingdale) - Source to Wanaque Reservoir except segment described below	FW2-TM
(Norvin Green State Forest) - That segment of the stream and all tributaries within the boundaries of Norvin Green State Forest	FW2-TM(C1)
(Haskell) - Wanaque Reservoir dam to Wanaque River	FW2-NT
PREAKNESS [SINGAC] BROOK	
(Wayne) - Source to, but not including, Barbours Pond	FW2-TP(C1)
(Barbours Pond) - Pond to Passaic River	FW2-NT
PRIMROSE BROOK	
(Harding) - Source to Lees Hill Road bridge	FW2-TP(C1)
(Harding) - Lees Hill Road bridge to Great Swamp National Wildlife Refuge boundary	FW2-NT
(Great Swamp) - Wildlife Refuge boundary to Great Brook	FW2-NT(C1)
RAHWAY RIVER	
SOUTH BRANCH	
(Rahway) - Source to Hazelwood Ave., Rahway	FW2-NT
(Rahway) - Hazelwood Ave. to mouth	SE2
MAIN STEM	
(Rahway) - Upstream of Pennsylvania Railroad bridge	FW2-NT
(Linden) - Penn. Railroad bridge to Route 1&9 crossing	SE2
(Carteret) - Route 1-9 crossing to mouth	SE3
RAMAPO LAKE (Ramapo) - Lake and all outlet streams and tributaries within the boundaries of Ramapo Mtn. State Forest	FW2-NT(C1)
RAMAPO RIVER (Mahwah) - State line to Pompton River	FW2-NT
TRIBUTARY (Oakland) - Entire length	FW2-TP(C1)
RINGWOOD CREEK	
(Ringwood) - Entire length, except segment described below	FW2-TM
(Sloatsburg) - Creek within Ringwood State Park	FW2-TM(C1)
RINGWOOD MILL POND (Ringwood)	FW2-NT(C1)
ROCKAWAY RIVER	
(Dover) - Source to Passaic River, excluding the Jersey City Reservoir and the segment described below	FW2-NT
(Berkshire Valley) - That segment within the boundaries of the Berkshire Valley Wildlife Management Area	FW2-NT(C1)
RUSSIA BROOK	
(Sparta) - Source to Lake Hartung dam	FW2-NT
(Milton) - Lake Hartung dam to, but not including, Lake Swannanoa	FW2-TM

ATTACHMENT AA-2

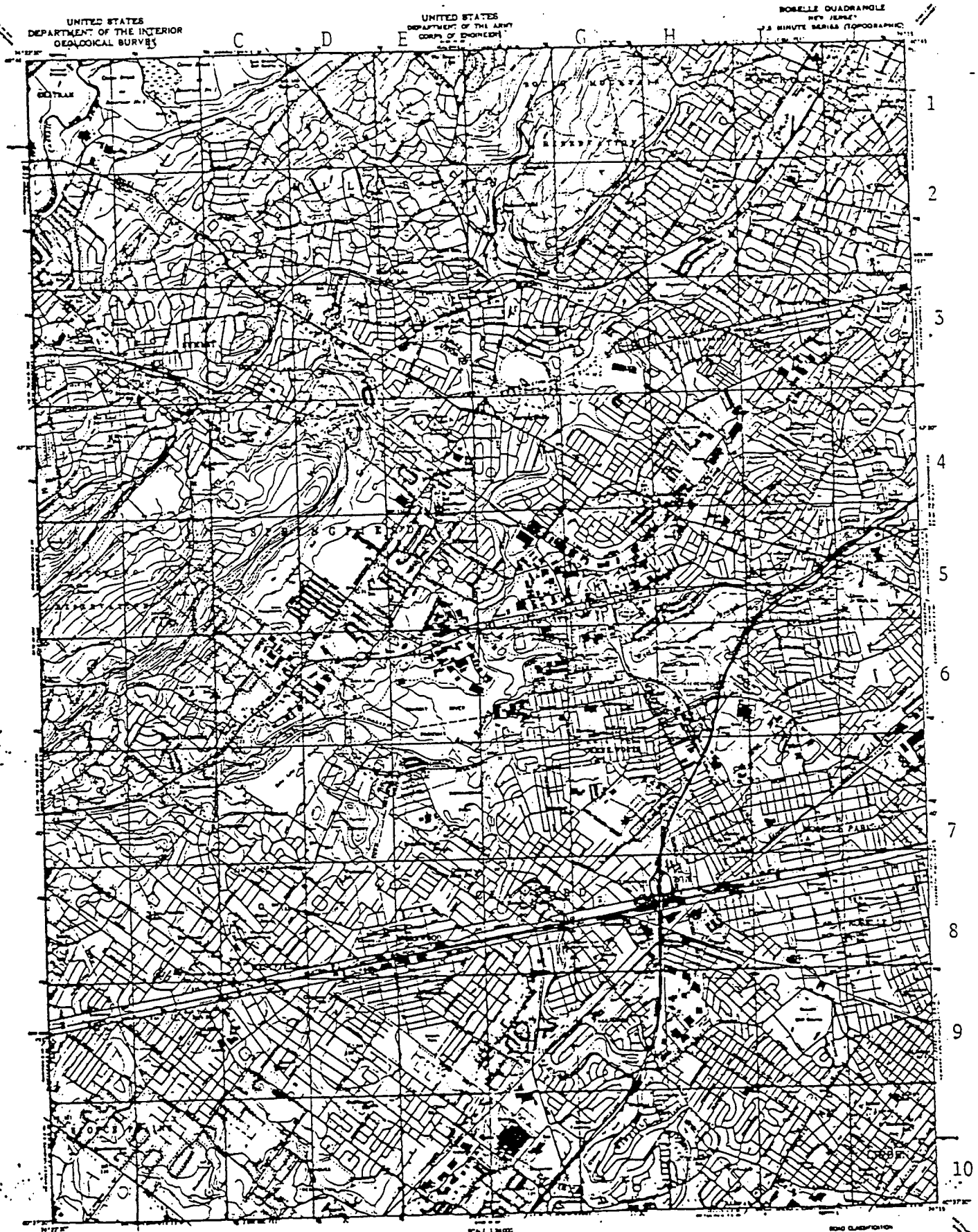
ATTACHMENT BB

NATURAL HERITAGE INDEX MAPS

The Natural Heritage Database contains several thousand records of individual occurrences of endangered and threatened species and ecosystems. Many of these occurrences either have not been documented in recent years or have not had habitat boundaries delineated. Because much work remains to be done to delineate habitat boundaries and determine current status for these occurrences, Natural Heritage Index Maps were devised to red flag general areas in which the occurrences are located. The index maps are meant to be used as a tool to point to areas which may be of significance for endangered biological diversity. These maps do not depict all endangered species habitat in the State, but merely general areas which contain documented occurrences. Many additional areas may contain unidentified or poorly documented occurrences.

The maps have been produced using a computer generated grid which shades a grid cell approximately 330 acres in size if an endangered or threatened species or ecosystem has been documented anywhere within the cell. To use these maps, we suggest that you first find the location to be checked on the quad maps and then refer to the same grid location of the Natural Heritage Index Maps. The Natural Heritage Program can be contacted for additional information as specific projects are planned.

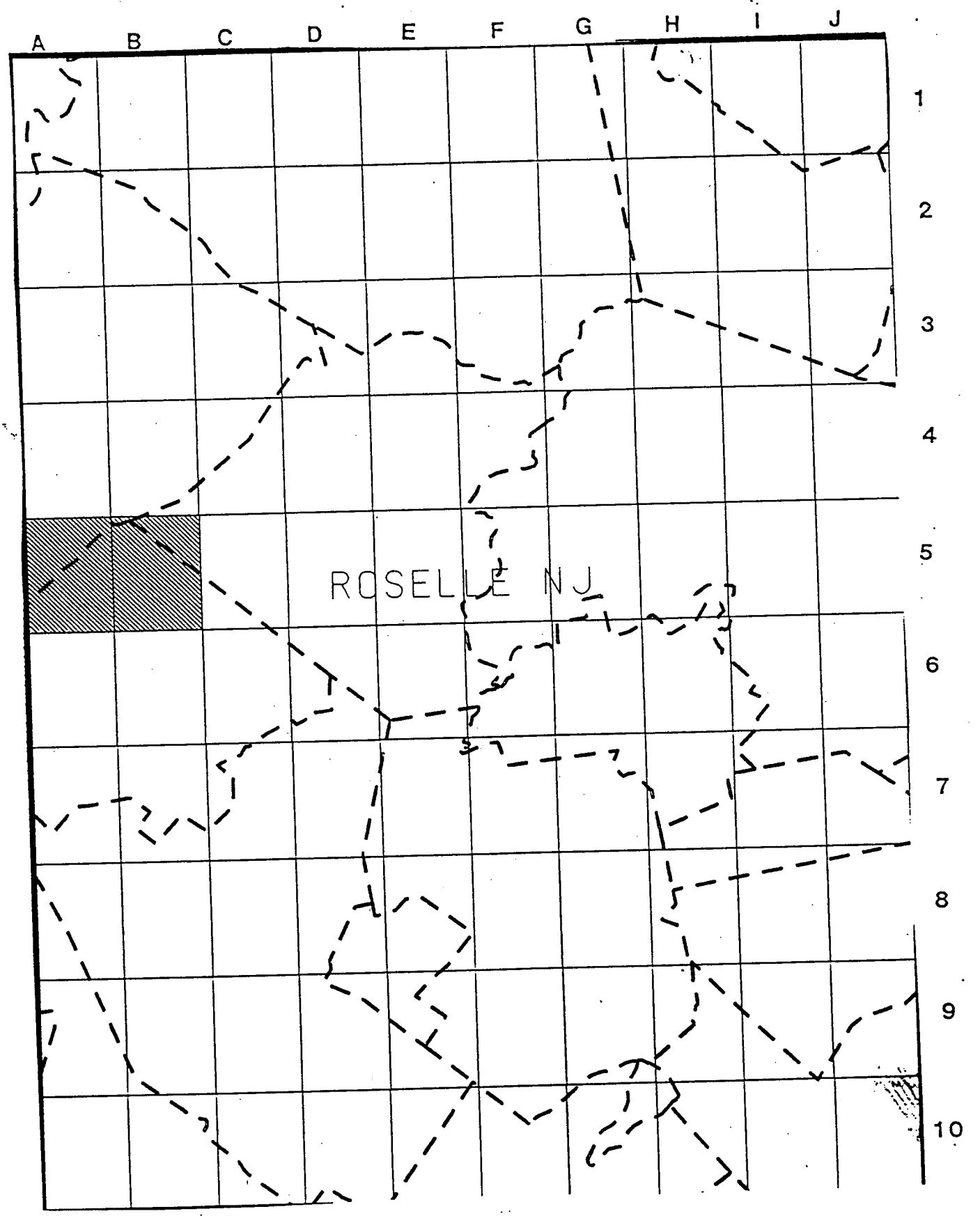
ATTACHMENT B-4



ATTACHMENT BB-2

DOCUMENTED LOCATION
KNOWN PRECISELY

DOCUMENTED LOCATION
KNOWN WITHIN 1.5MI.

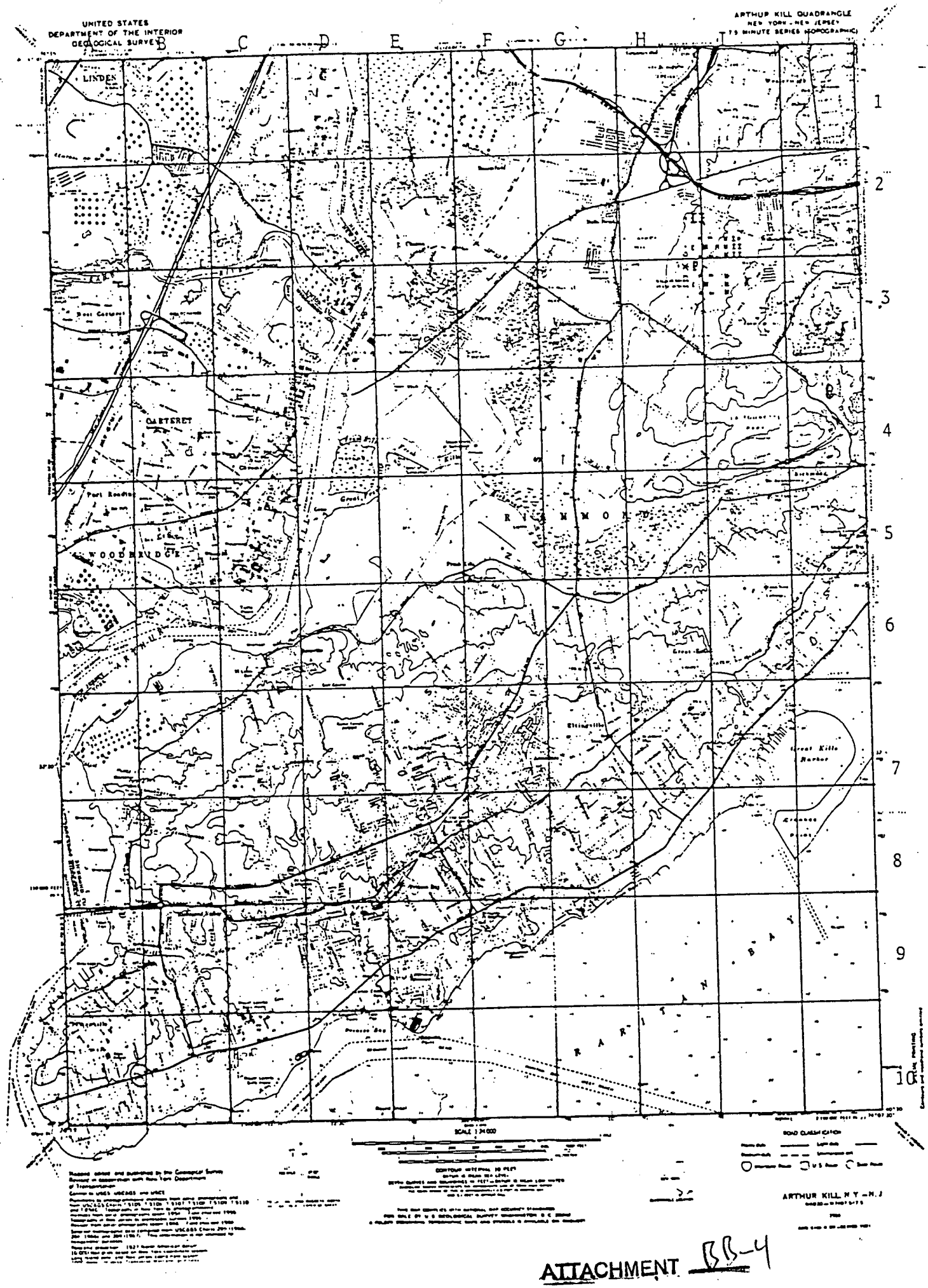


NOTE: THIS IS NOT A COMPLETE MAP OF RARE AND ENDANGERED SPECIES HABITAT FOR THIS AREA. IT REFLECTS DATA ON KNOWN OCCURRENCES COMPILED AS OF THE ABOVE DATE. IT INCLUDES BOTH HISTORICALLY AND RECENTLY DOCUMENTED OCCURRENCES. ADDITIONAL OCCURRENCES MAY BE FOUND ON UNSURVEYED HABITAT. FOR MORE INFORMATION, CONTACT THE OFFICE OF NATURAL LANDS MANAGEMENT, CN404, TRENTON NJ 08625.

MAY 1988

UPDATED SEMIANNUALLY

ATTACHMENT BB-3

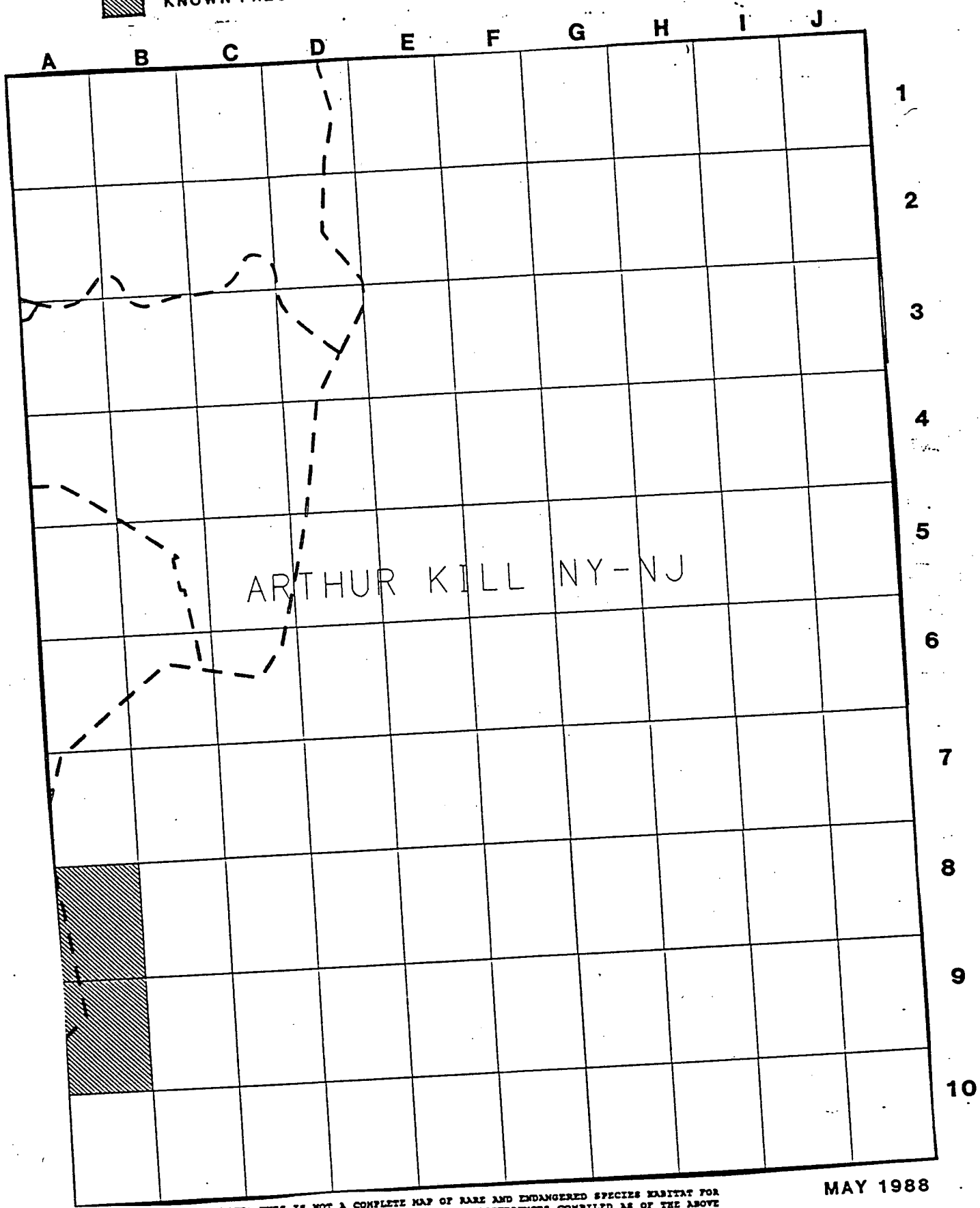


ATTACHMENT BB-4

GENERALIZED LOCATIONS FOR RARE & ENDANGERED ELEMENTS OF NATURE

DOCUMENTED LOCATION KNOWN PRECISELY

DOCUMENTED LOCATION KNOWN WITHIN 1.5MI.

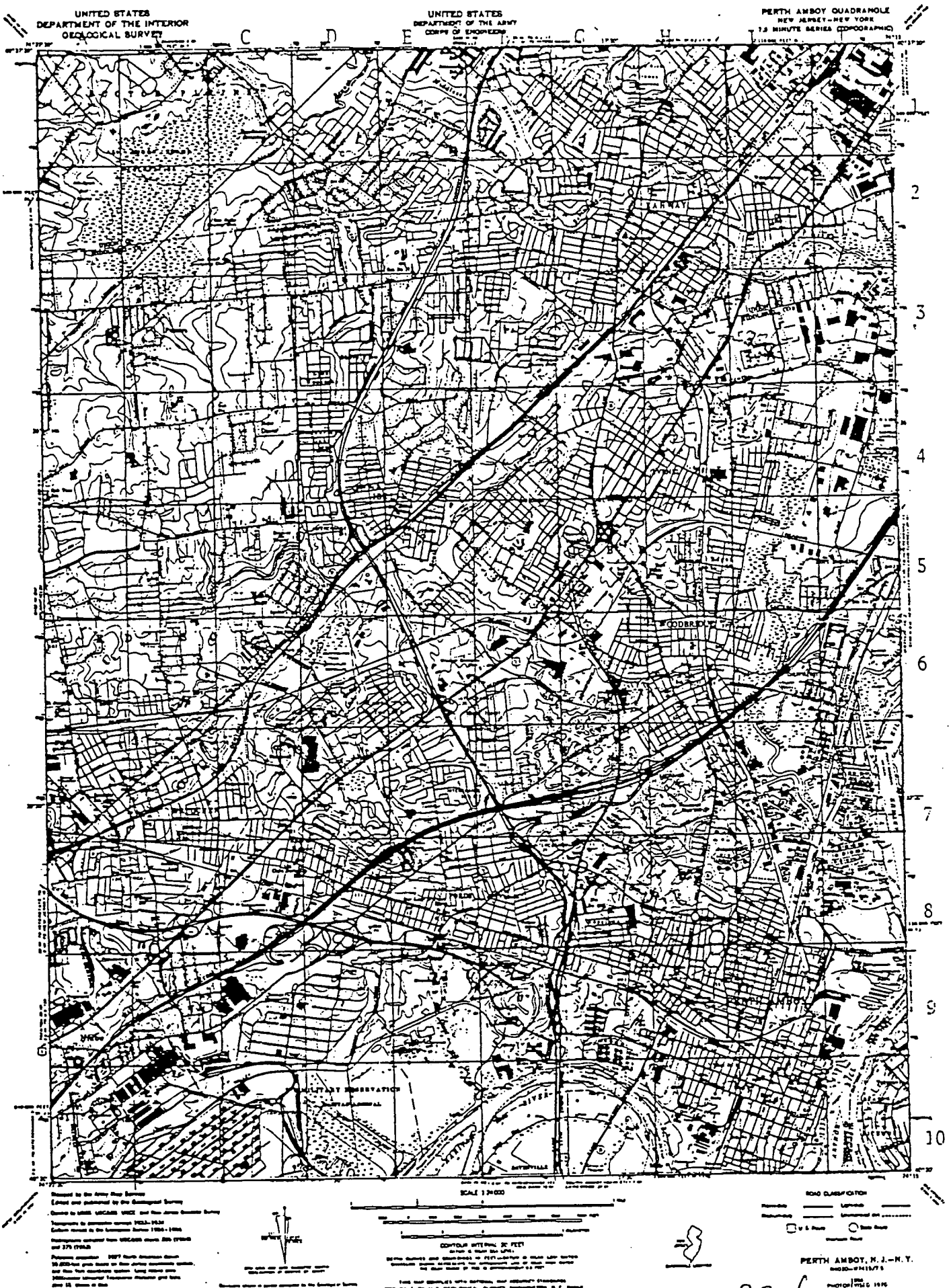


MAY 1988

UPDATED SEMIANNUALLY

NOTE: THIS IS NOT A COMPLETE MAP OF RARE AND ENDANGERED SPECIES HABITAT FOR THIS AREA. IT REFLECTS DATA ON KNOWN OCCURRENCES COMPILED AS OF THE ABOVE DATE. IT INCLUDES BOTH HISTORICALLY AND RECENTLY DOCUMENTED OCCURRENCES. ADDITIONAL OCCURRENCES MAY BE FOUND ON UNSURVEYED HABITAT. FOR MORE INFORMATION, CONTACT THE OFFICE OF NATURAL LANDS MANAGEMENT, CN404, TRENTON NJ 08625.

ATTACHMENT BB-5

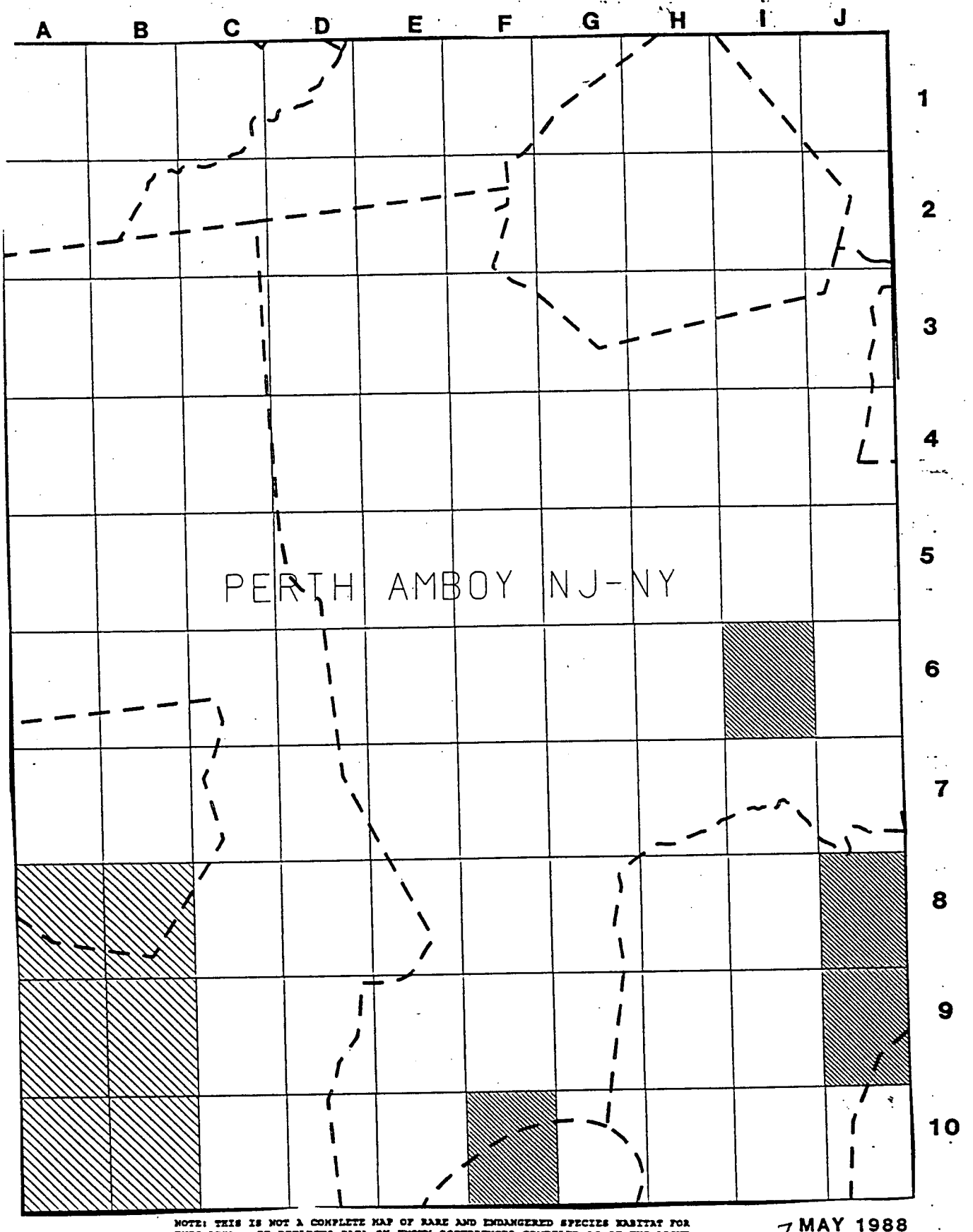


ATTACHMENT BB-6

GENERALIZED LOCATIONS FOR RARE & ENDANGERED ELEMENTS OF NATURAL DIVERSITY

DOCUMENTED LOCATION KNOWN PRECISELY

DOCUMENTED LOCATION KNOWN WITHIN 1.5MI.



NOTE: THIS IS NOT A COMPLETE MAP OF RARE AND ENDANGERED SPECIES HABITAT FOR THIS AREA. IT REFLECTS DATA ON KNOWN OCCURRENCES COMPILED AS OF THE ABOVE DATE. IT INCLUDES BOTH HISTORICALLY AND RECENTLY DOCUMENTED OCCURRENCES. ADDITIONAL OCCURRENCES MAY BE FOUND ON UNSURVEYED HABITAT. FOR MORE INFORMATION, CONTACT THE OFFICE OF NATURAL LANDS MANAGEMENT, TRENTON NJ 08625.

MAY 1988

UPDATED SEMIANNUALLY

BB-7

ATTACHMENT

ATTACHMENT CC

STATE AND FEDERAL THREATENED AND ENDANGERED SPECIES, BY QUAD

List provided by Computerized Fish and Wildlife Information System
New Jersey Division of Fish, Game and Wildlife
20 JUN 1990

097	Bernardsville	Salamander, blue-spotted
		Salamander, longtail
		Turtle, bog
		Turtle, wood
		Heron, great blue
		Bittern, American
		Owl, barred
		Woodpecker, red-headed
		Bobolink
		Sparrow, grasshopper
		Sparrow, Henslow's
099	Chatham	Salamander, blue-spotted
		Salamander, longtail
		Turtle, bog
		Turtle, wood
		Heron, great blue
		Owl, barred
		Wren, sedge
101	Roselle	Turtle, bog
103	Elizabeth	Tern, least
		Sparrow, Savannah
		Sparrow, grasshopper
105	Jersey City	Tern, least
107	Riegelsville	Shad, American
		Trout, brook
		Sparrow, grasshopper
109	Frenchtown	Shad, American
		Salamander, longtail
		Rattlesnake, timber
		Owl, barred
		Swallow, cliff
		Bobolink
		Sparrow, Savannah
		Sparrow, vesper
111	Pittstown	Salamander, longtail
		Turtle, bog
		Turtle, wood
		Woodpecker, red-headed
		Bobolink
		Sparrow, Savannah
		Sparrow, vesper
113	Flemington	Salamander, longtail
		Bittern, American
		Sandpiper, upland
		Bobolink
		Sparrow, grasshopper
		Sparrow, vesper
115	Raritan	Sandpiper, upland
		Swallow, cliff
		Bobolink
		Sparrow, Savannah
		Sparrow, grasshopper
		Sparrow, vesper

ATTACHMENT CC-1

Common Name: Turtle, bog
Scientific Name: Clemmys muhlenbergii

NJ.HABITAT

Freshwater marsh

Bog/swamp

LAND.USE

Agricultural Land

Cropland and Pasture

Rangeland

Shrub and Brush Rangeland

Mixed Rangeland

Water

Streams and Canals

Wetland

COMMENTS ON HABITAT ASSOCIATIONS

In Pennsylvania, Bog Turtles found primarily in sphagnum bogs or wet sedge meadows in or near slow moving streams with a muddy bottom, above 610 meter elevation. The highest populations occur in shrub stage of forest succession. *3073*

In Maryland, Bog Turtles were associated with spring-fed pockets of shallow water, a bottom substrate of soft mud and rock, dominant vegetation of low grasses and sedges, and interspersed wet and dry pockets. Turtles were never encountered beyond the wet meadow transitional edge. This habitat wa used for all activities, including mating, foraging, egg-laying, basking, resting, and over-wintering. *17*

ATTACHMENT CC-2